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**LIBYA'S ECONOMIC REFORM PROGRAMME  
AND THE CASE FOR A STOCK MARKET**

**Najeb M. H. Masoud**

**A thesis submitted to the University of Huddersfield  
in partial fulfilment of the requirements for  
the degree of Doctor of Philosophy**

**The University of Huddersfield Business School**

**June 2009**

## ABSTRACT

Libya is still in the early stages of its financial liberalisation and reform following eleven years of political chaos and nearly three decades of central planning control. However, it is advancing as a result of the removal of UN and US sanctions during the last few years, and there are signs of rapid development. Despite these advancements, no study has been found which explores the readiness of the Libyan financial market for the establishment of a stock market. This thesis was undertaken to develop a conceptual framework for a research model with a specific focus on the Libyan economic reform programme and the development of the Libyan stock market between 1999 and 2008.

The empirical study investigates the determinants of economic reform and stock market performance within the Libyan economy utilising data from three different sources and a multi-method approach. Self-administered questionnaires were distributed to the entire target population of the Libyan financial market, banking sector and a number of companies. A total of 330 questionnaires were distributed and of these, 203 were returned completed and usable, a response rate of 61.5 *per cent*. Fourteen semi-structured interviews were held with managers in a subset of companies, selected via a stratified sample of respondents to the self-administered questionnaires. The third method of data collection used financial market data over the period 1995-2006 from 42 emerging market countries. This data was analysed to examine whether best practice from emerging stock markets is transferable to the Libyan context. As a result, this study provides some knowledge that might usefully be generalised to other developing countries, particularly to those with a similar economic structure.

The primary contribution of this study lies in the fact that it is the first attempt to study the impact of stock market development on the economic growth process of a specific-country experience and evaluates the success of the economic reform programme and Libya's readiness to complete its transition to a market-based economy. The key findings are; first, the economic reform programme variables have an impact upon various features of the stock market performance variables within a linear regression model; second, stock market development has a significant effect on economic growth, and this effect remains strong even after controlling for banking sector and other control variables using a growth model; third, although the evidence largely supports the view that there is a stable, long-term equilibrium relationship between the evolution of the stock market and the evolution of the economy, it provides no support for the view that the stock market is a leading sector in the process of Libya's economic development. The evidence supports the view that the relation between stock market development and economic growth in emerging economies is bi-directional. The findings describe that the stock market and the banking sector in Libya in particular and emerging economy in general are complementary rather than substitutes in providing financial services to the economy.

This study seeks to make an original contribution to knowledge on the academic and practical levels as one of the first attempts at empirically investigating the impact of an economic reform programme on stock market performance in an emerging economy. The research represents an applied study of a type that has not appeared elsewhere, and the framework offered may therefore not only be appropriate to Libya as a case study, but also to other countries in similar circumstances. The research provides an important introduction to this area and has attempted to explore its significance for both the economy and business. This research adds to the existing body of literature regarding development and application of a series of models of economic reform programmes, stock market performance and economic growth in a developing country. Additionally, brief recommendations are offered regarding potential useful directions for future research arising from the conclusions of this research. These develop into a strategic framework for the improvement of an economic reform programme and stock market performance.

## DECLARATION

I, Najeb Masoud, declare that the thesis entitled:

### LIBYA'S ECONOMIC REFORM PROGRAMME AND THE CASE FOR A STOCK MARKET

To the best of my knowledge and belief, contains no material previously published or written by another person except where due reference is made in the thesis itself and the work presented in it is my own. I confirm that:

- This work was done wholly or mainly while in candidature for a research degree at Huddersfield University,
- This work has not previously been submitted for a degree or any other qualification at this University or any other institution of learning,
- Where I have quoted from the work of others, the source is always given; with the exception of such quotations, this thesis is entirely my own work,
- I have acknowledged all main sources of help,
- None of this work has been published before submission.

*Signed*

*Najeb Masoud*

*Dated*

*24 June 2009*

## DEDICATION

In the name of Allah the All-Merciful, the All-Compassionate



(إِنِّ أُرِيدُ إِلَّا الْإِصْلَاحَ مَا اسْتَطَعْتُ وَمَا تَوْفِيقِي إِلَّا بِاللَّهِ عَلَيْهِ تَوَكَّلْتُ وَإِلَيْهِ أَنِيبُ) (هود: 88)

*(I only desire reform to the best of my power. And my guidance cannot come except from Allah, in Him I trust and unto Him I turn repent) (The Holy Quran, Sura/ Hud, Verse 88)*

This thesis is dedicated to my own dear family; to my precious Mother *Saïde*, and to my Father *Muhammed*, for their constant support, interest and encouragement. And special dedication must be made to my lovely wife *Asma*, and our son *Muhammed* and beautiful daughter *Yaqeen*, to my dear sisters, brothers and their families, for their continuous prayers and encouragement. I am also indebted to my brother *Abdellah* for his support throughout the course of this study.

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In the name of Allah the All-Merciful, the All-Compassionate

“Who does not thank people does not thank Allah” (*Prophet Mohammed peace be upon him*)

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## LIST OF CONTENTS

LIBYA'S ECONOMIC REFORM PROGRAMME AND THE CASE FOR A STOCK MARKET .....	1
ABSTRACT .....	2
DECLARATION.....	3
DEDICATION .....	4
ACKNOWLEDGEMENTS .....	5
LIST OF CONTENTS.....	6
LIST OF TABLES .....	13
LIST OF FIGURES .....	16
LIST OF APPENDICES .....	17
LIST OF ACRONYMS AND ABBREVIATIONS.....	18

### Chapter One

#### Introduction

1.1	An Overview .....	20
1.2	Problems Addressed by the Study .....	23
1.3	Motivation for the Research .....	24
1.3.1	Challenge and Opportunity .....	24
1.3.2	The Need and Viability .....	29
1.3.3	Justification for the Research .....	30
1.4	Research Aim, Objectives and Questions.....	32
1.5	Research Scope.....	34
1.6	Empirical Study .....	35
1.7	Structure of the Study .....	36

### Chapter Two

#### An Overview of Libya's Economy Structural Changes and Development Patterns

2.1	Introduction .....	38
2.2	Historic Background in Libya .....	38
2.2.1	Geographical and Population.....	38
2.2.2	Political and Economic .....	39
2.3	Background to the Libyan Economic Reform Programme Period .....	41
2.3.1	Lessons and Challenge .....	42
2.3.1.1	Acceleration of the Transition to a Market Economy .....	42
2.3.1.1.1	Deregulation Programme .....	43
2.3.1.1.2	Privatisation Programme.....	45
2.3.1.1.3	Liberalisation Programme.....	46
2.3.2	Macro-economic Reform Performance .....	47
2.3.3	The Results of Economic Reform Programme .....	48
2.3.4	Foreign Direct Investment in the Libyan Economy .....	49
2.4	Financial System.....	50
2.4.1	Development of the Banking System .....	51

## LIST OF CONTENTS

2.4.2	Monetary Policy .....	52
2.4.3	Initiatives for a Libyan Stock Market.....	53
2.4.3.1	Umbrella: Libya's Stock Market under the Economic Reform Programme.....	53
2.4.3.2	Establishment of an Organised Stock Market in Libya .....	54
2.4.3.3	The Stock Market Structure.....	56
2.4.3.4	The Main Obstacles to a Sound and Efficient Stock Market in Libya.....	57
2.5	Summary and Conclusion.....	58

### **Chapter Three** **The Economic Reform Programme**

3.1	Introduction .....	60
3.2	Definitions of Economic Reform.....	61
3.3	The Importance, Aims and Objectives of Economic Reform Programmes.....	63
3.4	Assessing the Economic Reform Programme Variables and Macro-economic Reform Variables .....	64
3.5	The Process of Economic Reform .....	65
3.6	The Economic Reform Programme Experiments .....	66
3.6.1	Central and East European Countries Experiment .....	66
3.6.2	China Experiment .....	68
3.6.3	India Experiment .....	69
3.6.4	Latin American Experiment .....	70
3.6.5	Middle Eastern and North African Countries Experiment .....	72
3.7	Comparison between Experiment Countries .....	73
3.8	Summary and Conclusion.....	75

### **Chapter Four** **Economic Growth Theory**

4.1	Introduction .....	77
4.2	Neoclassical Growth Theory .....	78
4.3	New Endogenous Growth Theory and the Macro-determinants of Growth .....	81
4.4	How Stock Markets Affect Economic Growth.....	87
4.5	Summary and Conclusion.....	92

### **Chapter Five** **Emerging Stock Markets**

5.1	Introduction .....	94
5.2	Definition of a Stock Market .....	96
5.3	The Function of Stock Markets .....	97
5.4	The Importance of Stock Markets .....	98
5.5	Emerging Stock Markets in Developing Countries .....	100
5.6	Measuring Stock Market Variables .....	103
5.6.1	Market Size .....	103
5.6.2	Market Liquidity.....	103
5.6.3	Market Activity .....	104
5.6.4	Market Efficiency .....	105



## LIST OF CONTENTS

5.6.5	Market Volatility .....	106
5.7	The Measurement of Financial Maturity .....	106
5.8	Financial Crisis in Developed and Emerging Markets .....	108
5.9	The Relationship between Economic Reform Programmes and Stock Market Performance .....	113
5.9.1	Relationship between Deregulation and Stock Market Performance .....	113
5.9.2	Relationship between Privatisation and Stock Market Performance .....	114
5.10	The Relationship between Macro-economic Reform and Stock Market Performance .....	115
5.10.1	Relationship between Interest Rates and Stock Market Performance .....	116
5.10.2	Relationship between Inflation Rates and Stock Market Performance .....	117
5.10.3	Relationship between Exchange Rates and Stock Market Performance .....	118
5.10.4	Relationship between Budget Deficits and Stock Market Performance .....	119
5.10.5	Relationship between Per-capita Income and Stock Market Performance .....	120
5.10.6	Relationship between GDP Growth Rate and Stock Market Performance .....	120
5.11	Summary and Conclusion .....	121

## **Chapter Six**

### **Research Methodology**

6.1	Introduction .....	122
6.2	Research Aim and Objectives .....	124
6.3	Case Study and Justifications for its Use .....	125
6.4	Research Philosophy .....	126
6.5	Justification for the Research Philosophy .....	127
6.6	Research Framework .....	128
6.6.1	Building the Research Framework .....	129
6.6.2	The Primary Research Model .....	132
6.6.3	Background Statistical Technical Growth Model .....	132
6.6.4	Background Quantitative and Qualitative Data Analysis .....	134
6.7	Research Design - Survey Strategy .....	136
6.8	Data Collection Methods .....	138
6.8.1	Secondary Data .....	138
6.8.2	Primary Data .....	139
6.8.2.1	Self-Administered Questionnaire .....	139
6.8.2.1.1	Population and Samples .....	140
6.8.2.1.2	Designing and Developing the Questionnaire .....	143
6.8.2.1.2.1	Planning what to Measure .....	143
6.8.2.1.2.2	Formatting the Questions .....	144
6.8.2.1.2.3	Question Wording and Layout Decisions .....	144
6.8.2.1.2.4	Translation of the Research Questionnaire .....	145
6.8.2.1.2.5	Pilot Testing the Questionnaire .....	145
6.8.2.1.2.6	Fieldwork .....	148
6.8.2.1.3	Response Rate .....	148
6.8.2.2	Semi-structured Interviews .....	150
6.8.2.2.1	Pre-testing and Piloting the Interview .....	151

## LIST OF CONTENTS

6.8.2.2.2	Interview Sample .....	151
6.8.2.2.3	Interview Process .....	152
6.9	Validity and Reliability .....	153
6.9.2	Validity.....	154
6.9.3	Reliability .....	155
6.10	Data Analysis Statistics .....	156
6.10.1	Quantitative Data Analysis .....	157
6.10.1.1	Inferential and Differences Statistics Test .....	157
6.10.1.1.1	Descriptive Statistics.....	157
6.10.1.1.2	Kurtosis and Skewness .....	158
6.10.1.2	The Statistical Techniques used to Test the Research Hypotheses .....	158
6.10.1.2.1	Linear Multiple Regression Models.....	159
6.10.1.2.1.1	Multiple Regression Analysis Model.....	159
6.10.1.2.1.2	Correlation Statistics .....	160
6.10.1.2.1.3	Chi-square-based Measures .....	161
6.10.1.2.1.4	Statistical Significance.....	161
6.10.1.2.2	Econometric Growth Model.....	162
6.10.1.2.2.1	Two-Stage Least-Squares (2SLS) .....	162
6.10.2	Qualitative Data Analysis .....	163
6.11	Summary and Conclusion.....	165

## Chapter Seven Presentation of the Findings

7.1	Introduction .....	167
7.2	Data Sources and Analysis .....	167
7.2.1	Primary Data Sources (Self-administered Questionnaires and Semi-structured Interviews).....	167
7.2.2	Data Analysis .....	168
7.3	General Demographic Analysis.....	168
7.3.1	Sample Description Characteristics .....	168
7.3.2	Characteristics of Respondents.....	169
7.3.3	The Characteristics of Participants' Companies .....	170
7.4	Practices of the Libyan Economic Characteristics.....	171
7.4.1	Economic Reform Programme Independent Variables .....	172
7.4.1.1	Deregulation .....	172
7.4.1.2	Corporatisation .....	174
7.4.1.3	Privatisation .....	176
7.4.1.4	Liberalisation .....	179
7.4.2	Macro-economic Reform Independent Variables .....	181
7.4.2.1	Interest Rate .....	181
7.4.2.2	Exchange Rate .....	182
7.4.2.3	Inflation Rate .....	184
7.4.2.4	Budget Deficit.....	187
7.4.2.5	Per-capita Income .....	188
7.4.2.6	Real GDP Growth Rate.....	190

7.4.3	Financial Maturity Independent Variables .....	192
7.4.3.1	Banking Assets Ratio.....	192
7.4.3.2	Domestic Credit Ratio .....	194
7.4.3.3	Stock Market Capitalisation Ratio .....	196
7.4.4	Stock Market Performance Dependent Variables .....	197
7.4.4.1	Market Size.....	198
7.4.4.2	Market Liquidity.....	199
7.4.4.3	Market Activity.....	201
7.4.4.4	Market Concentration .....	203
7.5	Summary and Conclusion.....	205

## Chapter Eight

### Test of Research Hypotheses

8.1	Introduction .....	207
8.2	Descriptive Statistics for Research Variables used in Testing the Hypotheses .....	208
8.3	Structural Multiple Regression Model.....	211
8.3.1	The Simple Regression Linear Model .....	211
8.3.2	The Correlation Matrix.....	212
8.4	Results from Modelling Economic Reform Programme .....	213
8.4.1	Testing of Hypothesis Theorising the Relationship between Economic Reform Programme and Stock Market Performance.....	213
8.4.1.1	Correlation Matrix Statistics .....	214
8.4.1.2	Overall Fit of the Summary Model.....	214
8.4.1.3	Model Parameters .....	216
8.4.2	Subsidiary Hypotheses .....	218
8.4.2.1	Deregulation .....	218
8.4.2.2	Corporatisation .....	219
8.4.2.3	Privatisation .....	221
8.4.2.4	Liberalisation .....	222
8.4.3	Discussion: Findings from Testing the Economic Reform Programme Hypotheses .....	224
8.5	Results from Modelling Macro-economic Reform.....	225
8.5.1	Testing of Hypothesis Theorising the Relationship between Macro-economic Reform and Stock Market Performance.....	225
8.5.1.1	Correlation Matrix Statistics .....	225
8.5.1.2	Overall Fit of the Summary Model.....	226
8.5.1.3	Model Parameters .....	227
8.5.2	Subsidiary Hypotheses .....	229
8.5.2.1	Interest Rate .....	229
8.5.2.2	Exchange Rate .....	230
8.5.2.3	Inflation Rate .....	232
8.5.2.4	Budget Deficit.....	233
8.5.2.5	Per-capita Income .....	235
8.5.2.6	GDP Growth Rate.....	236
8.5.3	Discussion: Findings from Testing the Macro-economic Reform Hypotheses.....	238

## LIST OF CONTENTS

8.6	Results from Modelling Financial Maturity .....	239
8.6.1	Testing of Hypothesis Theorising the Relationship between Financial Maturity and Stock Market Performance .....	239
8.6.1.1	Correlation Matrix Statistics .....	239
8.6.1.2	Overall Fit of the Summary Model .....	240
8.6.1.3	Model Parameters .....	241
8.6.2	Subsidiary Hypotheses .....	242
8.6.2.1	Banking Assets Ratio .....	243
8.6.2.2	Domestic Credit Ratio .....	244
8.6.2.3	Stock Market Capitalisation Ratio .....	245
8.6.3	Discussion: Findings from Testing the Financial Maturity Hypotheses .....	246
8.7	Summary and Conclusion .....	247

## Chapter Nine

### An Empirical Investigation of Stock Market Performance in Emerging Market Countries

9.1	Introduction .....	250
9.2	MENA Within the Context of Emerging Markets .....	252
9.3	Empirical Model and Variable Measure .....	256
9.3.1	Empirical Model .....	256
9.3.2	Variable Measure .....	263
9.3.2.1	The Stock Market Development Variables .....	264
9.3.2.2	The Banking Sector Development Variables .....	265
9.3.2.3	Macro-economic Reform Variables .....	266
9.3.2.4	The Conditioning Information Set Variables .....	267
9.4	Data and Summary Statistical Analysis .....	267
9.4.1	The Sample .....	267
9.4.2	Summary Statistical Analysis .....	268
9.5	Analytical Technique .....	273
9.6	Empirical Results and Analysis .....	273
9.7	Determinants of Banking and Financial Market Development Indicators .....	279
9.8	Summary and Conclusion .....	289

## Chapter Ten

### Conclusions, Contribution and Implications

10.1	Introduction .....	292
10.2	Overview of the Current Research .....	292
10.2.1	The Theoretical Part of the Study .....	293
10.2.2	The Methodological and Methodical Part of the Study .....	296
10.2.3	The Empirical Part of the Study .....	296
10.3	The Key Findings .....	298
10.3.1	The Relationship between Economic Reform Programme and Stock Market Performance .....	299
10.3.2	The Relationship between Macro-economic Reform and Stock Market Performance .....	300
10.3.3	The Relationship between Financial Maturity and Stock Market Performance .....	301
10.3.4	Comparison between Emerging Countries and the Libyan Stock Market .....	302

## LIST OF CONTENTS

10.4	Contribution to Knowledge .....	304
10.4.1	Theoretically .....	304
10.4.2	Empirically .....	305
10.4.3	Methodologically .....	306
10.5	The Implication of the Study for Policy Reform .....	307
10.6	Limitations of the Research .....	312
10.6.1	Theoretically .....	312
10.6.2	Empirically .....	313
10.6.3	Methodologically .....	313
10.7	Outline for Future Research.....	314
10.7.1	Research Analysis.....	314
10.7.2	Economic Reform Programme .....	315
10.7.3	Macro-economic Reform.....	315
10.7.4	Financial Maturity .....	315
10.7.5	Stock Market Performance.....	315
10.7.6	Comparison between Emerging Countries and the Libyan Stock Market .....	316
REFERENCES .....		319
APPENDICES.....		354

## LIST OF TABLES

Table 1.1	Research Methodology and Objectives.....	36
Table 2.1	Transfer of Ownership of a Number of Factories and Production Units, 1987-1992 .....	45
Table 2.2	Number and Classification of Units that will be Transformed between 2004 and 2008 .....	46
Table 2.3	Measuring the Macro-economic Reform Programme in Libya, 1999-2004 .....	48
Table 2.4	Development in the Size of FDI in Economic Sectors, 2000-2005.....	50
Table 2.5	Number of Libyan Commercial Banks' Branches and Agencies.....	52
Table 2.6	Changes in Money Supply and Factors Affecting, 1970-1990 .....	53
Table 2.7	Companies Listed in the Libyan Stock Market.....	57
Table 3.1	Growth Rates in CEECs Following Reforms.....	68
Table 3.2	China's Average Real Annual GDP Growth Rates, 1960-2007.....	69
Table 3.3	Indian Rates of Economic Growth, 1950-2000.....	70
Table 3.4	The Economic Reform in Latin America.....	71
Table 4.1	The Macrodeterminants of Growth.....	87
Table 5.1	The Population and Income Per-capita Indicators of the World including Emerging Market Countries, 2005 .....	101
Table 5.2	Stock Market Performance after Liberalisation in Emerging Markets.....	102
Table 6.1	Difference between Positivist and Phenomenological Philosophies .....	126
Table 6.2	Study Population (Sample Size) .....	141
Table 6.3	Sample Size: Previous Studies .....	143
Table 6.4	Number of Respondents who did not Respond .....	149
Table 6.5	Sample Representative by Financial and Non-financial Sectors.....	150
Table 6.6	Data Quality Issues Related to Questionnaires and Semi-structured Interviews.....	153
Table 6.7	Values of Correlation Coefficient ( $r$ ) .....	160
Table 7.1	Distribution of Responses by Sample Size of Population Groups .....	169
Table 7.2	Descriptive Statistics for Deregulation .....	174
Table 7.3	Descriptive Statistics for Corporatisation.....	176
Table 7.4	Descriptive Statistics for Privatisation .....	176
Table 7.5	Descriptive Statistics for Liberalisation .....	180
Table 7.6	Descriptive Statistics for Interest Rates .....	181
Table 7.7	Descriptive Statistics for Exchange Rates.....	183
Table 7.8	Descriptive Statistics for Inflation Rates.....	185
Table 7.9	Descriptive Statistics Budget Deficit .....	188
Table 7.10	Descriptive Statistics for Per-capita Income .....	190
Table 7.11	Descriptive Statistics for Real GDP Growth Rate.....	190
Table 7.12	Descriptive Statistics for Banking Assets Ratio of GDP.....	194
Table 7.13	Descriptive Statistics for Domestic Credit Ratio of GDP .....	194
Table 7.14	Descriptive Statistics for Stock Market Capitalisation Ratio of GDP.....	196

## LIST OF TABLES

Table 7.15	Respondents' Interviews to Stock Market Development .....	197
Table 7.16	Descriptive Statistics for Market Size .....	199
Table 7.17	Respondents' Interviews to Market Size .....	199
Table 7.18	Descriptive Statistics for Market Liquidity .....	200
Table 7.19	Respondents' Interviews to Market Liquidity .....	201
Table 7.20	Descriptive Statistics for Market Activity .....	203
Table 7.21	Respondents' Interviews to Market Activity .....	203
Table 7.22	Descriptive Statistics for Market Concentration .....	204
Table 7.23	Respondents' Interviews to Market Concentration .....	205
Table 8.1	Descriptive Statistics for Research Variables .....	210
Table 8.2	Correlation of Descriptive Statistics for Regression Analysis .....	214
Table 8.3	Multiple Regression Model Summary .....	215
Table 8.4	ANOVA for Multiple Regressions .....	216
Table 8.5	Coefficient of the Multiple Regression Model .....	217
Table 8.6	Coefficient of the Multiple Regression Model .....	219
Table 8.7	Coefficient of the Multiple Regression Model .....	220
Table 8.8	Coefficient of the Multiple Regression Model .....	221
Table 8.9	Coefficient of the Multiple Regression Model .....	223
Table 8.10	Structural Model Results for Scope of Testing Hypotheses .....	224
Table 8.11	Correlation of Descriptive Statistics for Regression Analysis .....	226
Table 8.12	Multiple Regression Model Summary .....	226
Table 8.13	ANOVA for Multiple Regressions .....	227
Table 8.14	Coefficient of the Multiple Regression Model .....	228
Table 8.15	Coefficient of the Multiple Regression Model .....	229
Table 8.16	Coefficient of the Multiple Regression Model .....	231
Table 8.17	Coefficient of the Multiple Regression Model .....	233
Table 8.18	Coefficient of the Multiple Regression Model .....	234
Table 8.19	Coefficient of the Multiple Regression Model .....	235
Table 8.20	Coefficient of the Multiple Regression Model .....	237
Table 8.21	Structural Model Results for Scope of Testing Hypotheses .....	238
Table 8.22	Correlation of Descriptive Statistics for Regression Analysis .....	240
Table 8.23	Multiple Regression Model Summary .....	240
Table 8.24	ANOVA for Multiple Regressions .....	241
Table 8.25	Coefficient of the Multiple Regression Model .....	241
Table 8.26	Coefficient of the Multiple Regression Model .....	243
Table 8.27	Coefficient of the Multiple Regression Model .....	244
Table 8.28	Coefficient of the Multiple Regression Model .....	246
Table 8.29	Structural Model Results for Scope of Testing Hypotheses .....	247
Table 8.30	Structural Model Results for Scope of Research Testing Hypotheses .....	248

## LIST OF TABLES

Table 9.1	Stock Market Indicators: Market Size, Activity, Efficiency and Performance during 1995-2006 .....	254
Table 9.2	Descriptive Statistics: Forty Two Emerging Markets (Annual Average 1995-2006) .....	269
Table 9.3	Correlation Matrix among Variables.....	272
Table 9.4	Regression Results: Bank-based Indicators .....	276
Table 9.5	Regression Results: Market-based Indicators .....	278
Table 9.6	Banking Sector and Growth: Per-capita Real GDP as a Function of Proxy Measures for Banking Development Indicators .....	281
Table 9.7	Stock Market and Growth: Per-capita Real GDP as a Function of Proxy Measures for Stock Market Development Indicators.....	282
Table 9.8	Initial Stock Market Development, Banks and Growth, 42 Country Sample (Dependent Variables: Real Per-capita GDP Growth 1995-2006).....	285



## LIST OF FIGURES

Figure 1.1	Questions Related to the Aim and Objectives.....	33
Figure 1.2	Flowchart for Thesis Navigation.....	37
Figure 2.1	The Libyan Geography and Location.....	39
Figure 2.2	Political and Historical Landmarks.....	40
Figure 2.3	Potential Economic Reform Programme.....	43
Figure 2.4	Percentage of Real GDP Growth and GDP Per-capita in US\$, 1980-2007 .....	49
Figure 2.5	Indicators of the Development of Commercial Banks in Libya, 1970-2003.....	52
Figure 3.1	Key Events and Real World Oil Prices, 1970-2006.....	73
Figure 4.1	Relationships between Endogenous and Exogenous Variables .....	78
Figure 4.2	The Living Standards for the Long-term Process .....	81
Figure 4.3	Theoretical Approaches to Finance and Growth.....	89
Figure 5.1	Classification of Stock Markets .....	96
Figure 5.2	Flow of Funds through the Financial System.....	97
Figure 5.3	Distribution of World GDP and Population, 2005 .....	101
Figure 5.4	The World Equities Crisis in Europe, American and Asia Pacific in September 2008.....	110
Figure 5.5	Structural Changes in GDP by Economic Activity (1980-2007) .....	112
Figure 5.6	Conceptual Framework of Privatisation and Regulatory Reforms.....	115
Figure 6.1	Major Steps Influencing Research Design and Process .....	123
Figure 6.2	Conceptual Framework for the Impact of Stock Market Performance.....	131
Figure 6.3	The Primary Model for the Impact of Stock Market Performance.....	132
Figure 6.4	Theoretical Model from other Emerging Markets .....	133
Figure 6.5	Research Typology Diagram.....	136
Figure 6.6	Deductive and Inductive Approaches .....	137
Figure 6.7	Research Activities and the Pilot Test.....	146
Figure 6.8	Values of the Correlation Coefficient .....	160
Figure 6.9	Type I and Type II Errors.....	162
Figure 8.1	Framework of Research Data Analysis Excluding the Measurement Analysis .....	209
Figure 8.2	The Primary Model for the Impact of Stock Market Performance.....	210
Figure 9.1	Theoretical Model from other Emerging Markets .....	<b>Error! Bookmark not defined.</b>
Figure 9.2	Forms of Variable Measures .....	264
Figure 9.3	Scatterplot of Predicted and Observed Variables.....	283

## LIST OF APPENDICES

Appendix A	General Information about Libya.....	354
Appendix B	Research Methodology Diagram.....	372
Appendix C	Covering Letter from the Researcher Sent with the Self-administered Questionnaires .....	374
Appendix D	Covering Letter from Researcher Sent with the Self-administered Questionnaires (in Arabic) .	375
Appendix E	Covering Letter form Cultural Affairs the Libyan People’s Bureau Sent with Self-administered Questionnaires in (Arabic) .....	376
Appendix F	Free Order Form.....	377
Appendix G	Economic Reform Programme and Stock Market Performance Questionnaires (Original in Design).....	378
Appendix H	Covering Letter from the University of Huddersfield with Regard to Conducting the Semi-structured Interviews .....	388
Appendix I	Interview Questions .....	389
Appendix J	Respondent Interviews.....	390
Appendix K	Chapter Seven: Presentation of the Findings .....	392
Appendix L	Chapter Eight: Statistics Tests; Appropriate Use .....	419
Appendix M	Chapter Nine: Finance and Economic Growth.....	426

## LIST OF ACRONYMS AND ABBREVIATIONS

**1- Abbreviations**

AMF	Arab Monetary Fund
BPC	Basic People's Congresses
BGC	Board of the General Committee
CEECs	Central and East European Countries
CBL	Central Bank of Libya
EMDB	Emerging Market Database
EU	European Union
GPC	General People's Committee
GDP	Gross Domestic Product
IFC	International Financial Corporation
IMF	International Monetary Fund
LD	Libyan Dinar
LSM	Libyan Stock Market
MENA	Middle East and North Africa
PCs	People's Congresses
PhD	Doctor of Philosophy
Prof	Professor
TFP	Total Factor Productivity
2SLS	Two-Stage Least-Squares
UAE	United Arab Emirates
UHBS	University of Huddersfield Business School
UK	United Kingdom
UN	United Nations
US	United States
US\$	United States Dollar
WTO	World Trade Organisation
WWW	World Wide Web

**2- Code****Variables**

BAR	Bank Asset Ratio is the Total Asset of the Banking Sector Divided by GDP
CLM	Capital Market
CYM	Currency Market
DC/GDP	Domestic Credit Ratio in the Ratio of Bank Claims on Private Sector GDP
EDUC	Secondary School Enrollment Rate
EF	Economic Freedom
ERP	Economic Reform Programme
ERPC	Corporatisation
ERPD	Deregulation
ERPL	Liberalisation
ERPPV	Privatisation
FLI	Financial Institutions
FM	Financial Maturity
FMBA	Banking Assets Ratio
FMDC	Domestic Credit Ratio
FMMC	Market Capitalisation Ratio
INF	Inflation Rate
INVES	Value Investment as Percentage of GDP
LBAR	Natural Logarithm of Bank Asset Ratio as Total Asset of the Banking Sector
LBAR x $\Delta$ PCI	Interaction with Change Per-capita Income
LDC/GD	Natural Logarithm of Domestic Credit Ratio in the Ratio of Bank Claims on Private Sector GDP
LDC/GD x $\Delta$ PCI	Interaction with Change Per-capita Income
LIPCY	Natural Logarithm of Initial Per-capita Income
LMC/GD x $\Delta$ PCI	Interaction with Change Per-capita Income
LMC/GDP	Natural Logarithm of Market Capitalisation Ratio as the Market Capitalisation Divided by GDP
LTURN/GD x $\Delta$ PCI	Interaction with Change Per-capita Income
LTURN/GDP	Natural Logarithm of Turnover Ratio as the Total of Equity Transactions Divided by Market Capitalisation
LVT/GD x $\Delta$ PCI	Interaction with Change Per-capita Income
LVT/GDP	Natural Logarithm of Value Traded Ratio as the Investment Ratio as the Volume of Gross Capital Formulation Divided by GDP
MC/GDP	Market Capitalisation Ratio is the Market Capitalisation Divided by the GDP
MER	Macro-economic Reform
MERBD	Budget Deficit

## LIST OF APPENDICES

MERER	Exchange Rate
MERIFR	Inflation Rate
MERIR	Interest Rate
MERPCI	Per-capita Income
OPEN	Sum of Imports and Exports Divided by GDP
PCS	Public Sector
PCYG	Growth as Real Per-capita GDP Growth
POP	Population Growth Rate
PS	Political Stability
PVS	Private Sector
SMP	Stock Market Performance
SMPMA	Market Activity
SMPMC	Market Concentration
SMPML	Market Liquidity
SMPMZ	Market Size
TURNOVER	Total of Equity Transactions Divided by Market Capitalisation
VT/GDP	Value Traded Ratio as Investment Ratio is the Volume of Gross Capital Formulation Divided by GDP
<b>3- Mathematical Operators</b>	
SPSS	Statistical Package for the Social Sciences
$\Sigma$	This called sigma means ‘adds every thing up’. For instance, if you use something like $\sum x_i$ it just means add up all of the scores you’ve collected
<b>4- Greek Symbols</b>	
$\alpha$	Probability of making a type I error
$\beta$	Probability of making a type II error
$B_i$	Standardised regression coefficient
$\chi^2$	Chi-square test statistics
$\epsilon$	Usually stands for error
$\mu$	Mean of a population of scores
<b>5- English Symbols</b>	
$b_i$	Regression coefficient (unstandardised)
$df$	Degrees of freedom
DW	Durbin-Watson test for residual serial correlation
$e_i$	Error associated with the $i$ th person
$F$	$F$ -ratio (test statistics used in ANOVA)
In	Natural logarithm
MS	Means squared error. The average variability in the data
$N, n, n_i$	Sample size. $N$ usually denotes the total sample size, whereas $n$ usually denotes the size of a particular group
$P$	Probability (the probability value, P-value or significance of a test are usually denoted by $P$ )
$r$	Person’s correlation coefficient
$r_s$	Person’s rank correlation coefficient
$R$	Multiple correlation coefficient
$R^2$	Coefficient of determination (i.e. the proportion of variance within some data explained by the model)
$S$	Standard deviation of a sample of data
$S^2$	Variance of a sample of data
SS	Sum of squares or sum of squared errors to give its full title
$SS_M$	Model sum of squares
$SS_R$	Residual sum of squares
$SS_T$	Total sum of squares
$t$	Test statistics for student’s t-test
VIF	Variance Inflation Factors
VIR	Voluntary Index Ratio
Z	A data point expressed in standard deviation units

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 AN OVERVIEW**

The purpose of this introductory chapter is to provide an overview and general background to the research and its motivations, outlining the topic for investigation, the research aim, objectives and associated questions. It offers a statement of the problems facing Libya and the justification for the research, providing a brief indication of the methodology to be followed and supplying detail of the structure of the thesis. The aim of this thesis is to explore which economic reform programme, macro-economic reform and institutions are required for strong, well-developed and efficient stock market performance in Libya. In connection with understanding the significance of the subject, this study seeks to explore the development of the current securities market, assesses recent efforts to create new deregulation, to create new institutions and attract further foreign investment that could modernise the market, and offers suggestions for reforms that could stimulate additional market development. In the main, the thesis provides an assessment of the quality and effectiveness of the operation of the economic reform programme and the infrastructure of the securities market in Libya. The study is of importance since, as is the case in many developing countries that have introduced an ambitious economic reform programme, the creation of a stock market in Libya has occurred on the assumption that more effectiveness in the development of economic growth will follow. However, there is no empirical evidence that provides policy markets with information relating to the particular fundamentals in developing a stock market in Libya. Therefore, there is a point of view that doubts the likely positive impact of a stock market upon economic growth in developing countries with a small population such as Libya.

This study's results will be useful in reaching policy decisions to develop stock markets in order to increase economic growth in developing countries and/or emerging economies in general, and within Libya in particular. Furthermore, providing empirical evidence regarding this critical issue within specific emerging economies will add to the literature on economic reform related to the role of stock market development and its influence on economic growth and, thus, initiate an exciting topic for further research. During the twentieth century the world was fragmented into diverging economic blocks, one following the direction of capitalism and emphasising privatisation and investment in a market-based economy and the other pursuing

centrally-planned, state-owned economies. Notwithstanding that, capitalism emerged as the more effective method of managing economies globally. Most of the previous socialist and communist economies then began the trend towards partial, or complete economic reform. Indeed, with the beginning of the reforms in 1985 which would eventually lead to the dissolution of the Soviet Union in 1991, the newly-independent countries in Africa, the Middle East and Latin America all came to realise the importance of economic reform programmes. Accordingly, since 1994 most developing countries have implemented similar programmes, often under pressure from global organisations such as the International Monetary Fund (IMF) and the World Bank (Williamson, 1994).

During the 1990s and first few years of the 21<sup>st</sup> century, Middle East and North Africa (MENA) countries - in particular Libya, Egypt, Tunisia, Jordan and Saudi Arabia - all began similar reform programmes aimed at achieving the stabilisation of their economies. Specifically, they found themselves incapable of attracting sufficient foreign exchange to protect their currencies and began to transform their economies from socialist and state-owned to market-based entities (Creane et al., 2004). Financial markets are today classified as bank-based or market-based. This division can be further illustrated by the Anglo-Saxon market-based models which are prevalent in capitalist economies and allow for private investment and private ownership, and the other type, which is largely exemplified in Germany. The latter, bank-based model, has been practised more by Eastern European countries, which were centrally-planned economies or, to be politically correct, communist economies (Hall and Soskice, 2001). The relationship between financial development and economic growth has become an object of extensive analysis and debate, the question arising being whether or not markets are critical in influencing economic growth. Vastly disparate arguments are proposed by academic economists in this respect, some believing that the role of finance in economic growth is not significant, or that it is of secondary importance. Lucas (1988: 3), for instance, argues that *“Economists badly over-stress the role of financial factors in economic growth”*. Others, though, consider that financial markets play a key role in economic growth. Such disagreement regarding the nature of financial market development in economic growth is not a novel phenomenon. Bagehot (1873) and Hicks (1969), for instance, proposed that financial market development played a critical role in British industrialisation by facilitating the mobilisation of funds for “immense works” and, in this respect, Bagehot (1873: 3-4; cited by Sinha and Macri, 1999: 4) observed:

*“We have entirely lost the idea that any undertaking likely to pay, and seen to be likely, can perish for want of money; yet no idea was more familiar to our ancestors, or is more common in most countries. A citizen of London in Queen Elizabeth’s time [...] would have thought that it was no use inventing railways (if he could have understood what a railway meant), for you would have not been able to collect the capital with which to make them. At this moment, in colonies and all rude economies, there is no large sum of transferable money; there is no fund from which you can borrow, and out of which you make immense works”.*

Gurley and Shaw (1955) made a direct correlation between financial markets and real activity, recognising that financial markets can widen borrowers’ financial capacity and improve the efficiency of inter-temporal trade and result in the pooling of investment. Moreover, they asserted that financial markets are critical to economic development because they can increase physical capital accumulation. Robinson (1952: 86) did not attribute a role to financial institutions in development, believing that economic growth creates a demand for financial service and that *“where enterprise leads, finance follows”*. She found that financial development was merely a short-term economic development and that financial institutions underpinned no significant economic growth. However, other studies, such as those of Goldsmith (1969), McKinnon (1973) and Shaw (1973), recognised that financial intermediation could be positively correlated with economic growth. Recent analysis of the link between financial development and growth, gained from insights acquired as a result of using the technique of endogenous growth models, has illustrated that growth rates could be related to technology, income distribution and institutional arrangements. This provides the theoretical background that empirical studies have lacked; thus illustrating that financial intermediation affects the level of economic growth. The resulting models have provided a new impetus to empirical research into the effects of financial development (Gertler, 1988; Levine, 1997; Bossone, 2000; Tsuru, 2000). These researchers established that financial intermediation, such as in the mobilising of capital, assisting the allocation of resources, monitoring managers and facilitating risk management, could impact upon economic growth.

The aim of this chapter, then, is to provide a general background concerning the research. As such, it is divided into five main sections. Section 1.2 describes the problems addressed by the study. In Section 1.3, the motivation behind conducting this research is discussed. In section 1.4, the overarching aim and objectives of the research are presented. In Section 1.5, presented the scope of the research. In Section 1.6, the empirical study chosen is briefly justified. Finally, in Section 1.7, a brief summary of the format and structure of this research are provided.

## 1.2 Problems Addressed by the Study

The problem to be addressed by this study is the economic situation of one of the MENA economies, namely that of Libya, which has witnessed organisational variations following the revolution of 1969, since when the Libyan economy has been driven by the Green Book Theory<sup>1</sup>, which provides “*for a socialist state and a state-planned economy. Investment was essentially state-driven and trade and price controls, along with subsidies, were widespread. Economic performance was [strictly] constrained by stifling government interference in the economy and an [unfavourable] business climate. Economic conditions began to deteriorate in the mid-1980s with the fall in world oil prices, and worsened in the 1990s as a result of UN economic sanctions. The authorities were reluctant to initiate any economic reforms [whilst] the country was subject to sanctions*”, IMF (2005: 5).

There followed the challenge of devising a strategic policy that would aim to achieve the sustainable development of the Libyan economy, especially in view of the current official tendencies for the restructuring of the Libyan economy by increasing the role of private ownership in the economy and also the continuing process of the privatisation of the public sector within the country (IMF, 2005). The privatisation programme was started in 1999 to alleviate the budget constraints of state-owned enterprises and to create economic diversity after a long dependence on oil. Oil revenues comprise over 95 *per cent* of Libya's hard currency earnings (75 *per cent* of government receipts and 30 *per cent* of the gross domestic product) and, thus, the economy was severely damaged by the dramatic decline in oil prices during 1998, as well as by reduced oil exports and production, in part as a result of UN and US sanctions. However, the imposition of UN sanctions in 1999 brought the Libyan economy to the brink of collapse, at which point the government introduced a rigid economic reform programme with the intention of transforming its socialist state-planned economy into one based upon capital, which (it was believed) would combat the stagnating status of the Libyan economy during the previous decade. In the late 1990s macro-economic stability was the sole intent of such reforms, which aimed to train the workforce, generate new jobs, encourage investment and sell public enterprises in order to minimise public spending.

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<sup>1</sup> For more explanation, see Appendix A: Section A 1.1 Political Determinants of Economic Reform.



In fact, Libya, like other nations, had long suffered from deficiencies in the economy due to its political stance and UN sanctions, which had resulted in a high rate of inflation, a balance of payments' deficit, and low employment and growth rates, ultimately combining to create an imbalance in the economy. Problems of irregularity in supply and demand have a negative impact on prices and the balance of payments. For that reason, fiscal and monetary reforms constituted the core of the programme in its first stage, whereas structural reforms constituted the core aim of the remainder of the programme in the medium term. Therefore, in 1999, an economic reform programme was urgently needed to ensure improved economic performance (Alfajori, 2003), which has now been achieved to steer the post-sanctions Libyan economy away from the edge of collapse. Nonetheless, there remains much for this reform programme to do before it can yield fruit due to numerous obstacles such as the sharp decrease in oil prices, shortage of trained labour and structural weaknesses in the financial system. However, similar to many other emerging countries, the economic reform programme was set with clear overall objectives, these being to accelerate the rate in the growth of the economy and to increase standards of living for the Libyan population. To achieve those objectives, a high level of investment is required which, it can be argued, demands a strong and healthy stock market capable of attracting more of both *domestic and foreign investments*.

### **1.3 MOTIVATION FOR THE RESEARCH**

The motivation for conducting this research, hence, can be divided into three main subsections. Subsection 1.3.1 displays the challenge and opportunity. Subsection 1.3.2 presents the need and viability. Subsection 1.3.3 addresses the justifications for the research.

#### **1.3.1 Challenge and Opportunity**

The Libyan economy suffers from numerous negative aspects resulting from the political situation and financial crises. As mentioned earlier, different sanctions were imposed on Libya by the US and the UN. The US banned imports of Libyan crude oil in 1981 and extended it later to include direct trade, commercial contracts and travel activities. The UN embargo began in 1992 after the accusation of two Libyan citizens of involvement in the crash of an American aeroplane in Scotland in 1988. The UN embargo was eased in 1999 and completely ended in 2003 after the country accepted responsibility for the crash, while the US embargo was ended in 2004. The Libyan economy has suffered from these sanctions, especially those imposed by the UN, which have additionally influenced the health, education, oil sector and

other aspects of Libyan people's lives. In June 2003 President Al-Qaddafi declared that the country's public sector had failed and called for oil sector privatisation, pledging to take Libya into the World Trade Organisation (WTO) and appointing the former Trade and Economy Minister Tayeb Asafay, a supporter of privatisation and liberalisation, as Prime Minister (Igbikiowubo, 2003). In October 2003 the Prime Minister announced a list of 360 firms in a variety of sectors (steel, petrochemicals, cement and agriculture) which were to be privatised (Energy Information Administration/Department of Energy, 2005). This was executed in three stages. The ownership of 260 factories was to be transferred from the public to the private sector by the end of 2005. The second stage, was to transform 46 factories into shareholding companies in which employees and others would own shares by the end of 2007. The third stage aimed to privatise 54 factories during the period 2007/2008.

Further improvement in relations between Libya and the West will allow more of a focus on boosting investment in the oil and gas sector, where competition is increasing between EU and US companies. With an investment target of some 30 billion US\$ by 2010, the National Oil Company (NOC) launched several rounds of Exploration and Production Sharing Agreements, which include incentives for both oil and gas development companies (St John, 2008). Furthermore, *"Libya is also looking at internal political reform, on the basis that it cannot combine a foreign policy open to the international capitalist system with a domestic political system based on post-Cold War revolutionism. Just how far Libya is prepared to go in terms of reforming its internal affairs, however, remains to be seen [...] Hence political reform will require structural changes and time to advance"* (Arbab, 2005: 6).

Since August 2003 Libya, UK and the US have reached an agreement that Libya will accept responsibility for the 1988 bombing of Pan Am flight 103 whereupon Libya agreed to pay 2.7 billion US\$ in compensation to the families of the victims of the Lockerbie (Scotland) air crash. In response, the UN Security Council voted on 12 September 2003 to lift its 11-year economic sanctions' regime and the arms embargo which had been in place for 18 years. This represented a further step that allowed EU countries to export arms and other military equipment to the Libyan government. The Libyan Foreign Minister announced on 19 December 2003 that the government had decided of its own *free will* to completely divest of internationally banned weapons (Paul, 2004). In 2004 Libya agreed to pay compensation to the French airline UTA for the loss of a plane which crashed over the west African state of Niger in 1989, to pay 170 million US\$ compensation, with each of the victims' families receiving 1

million US\$, and to pay 35 million US\$ to relatives of the victims of a 1986 attack on a discotheque in West Berlin (Time, 2004). On 23 April 2004 US President Bush made the decision to remove most of the remaining sanctions on connected business in Libya, with the establishment of a diplomatic mission in Tripoli. Six months later he revoked the trade embargo on Libya, but the nation remains on the US list of state sponsors of terrorism. By 27 April Al-Qaddafi commenced a visit to Europe after 15 years of the Euro-Mediterranean Partnership (EMP or Barcelona Process) for preliminary talks, with an announcement in Brussels that he would again support Freedom Fighters if the west refused his offer of peace (Tim, 2004; Fernández, 2006). Since September 2004, when the UN and US gradually removed Libya-specific trade sanctions and the implementation of measures intended at enhancing the role of the private sector in the economy, the pace of reform in Libya has accelerated (IMF, 2005).

On 1 November 2004 Prime Minister Shukri Ghanem announced that Libya intended to abolish some 5 billion US\$ worth of subsidies on electricity, fuel and basic food items in a move to liberalise the economy. One month later the freeze on 1 billion US\$ in assets in US banks which had been imposed in 1986 was withdrawn. In mid-November 2004 President Bush asked Congress to lift the US ban on export and imports bank loans to Libya, arguing that action was very important to facilitate US investment (St John, 2006). In January 2005 the Libyan government announced the first of a series of new tenders for Exploration and Production Sharing Agreements (EPSA) and awarded 11 of 15 new EPSAs to American oil companies operating in partnership with other companies. The other winners, Petrobras of Brazil, Indian oil, Medco Energy International of Indonesia, Oil Search of Australia, Verenex Energy of Canada, and Sonatrach of Algeria, reflected global interest in Libyan hydrocarbon deposits (St John, 2006). Italian businesses, particularly investment companies, had interests in Libyan oil and gas, which provided about 25 *per cent* of Italy's total energy imports and with activation of the "Green Stream" gas pipeline, its share was increased to 30 *per cent*.

On 3 February 2005 the US Boeing Corporation announced the sale of up to six 737-800s to Buraq Airlines, a privately owned Libyan company. The sale to Buraq, Libya's first private airline, was valued at 367 million US\$ (St John, 2006). In March 2005 the General People's Congress approved a measure allowing foreign banks to establish branches in Libya and to contribute as shareholders in local banks. In August 2005 Libya lifted all import duties (except for those on cigarettes) in a bid to spur trade and render the country a free trade area. These

duties were replaced by a 4 *per cent* tax called the Service Import Tax. On 23 May 2005 the organisation Human Rights Watch said that, in their first visit to the country, Libya had taken significant steps to improve its human rights' record over the past years. However, there were still serious problems, including the use of violence against detainees, restrictions on the freedoms of expression and assembly, and the continued detention of political prisoners. Sarah Whitson, who works as MENA director at Human Rights Watch said *"The Libyan Government's invitation reflected a welcome degree of transparency. We're looking forward to further human rights improvements in the country, as Libyan and international laws demand"* (Human Rights Watch 2005). In May 2006, the US restored full diplomatic relations, removing Libya from the US State Department list of State Sponsors of Terrorism and omitting it from the annual certification of countries not fully cooperating with American antiterrorism efforts. In October 2007 Libya was voted onto the UN Security Council as a non-permanent member. Although Washington did not endorse Libya's application, it did not block it either (as it had with Libya's previous attempts to join in 1995 and 2000) (Kaplan, 2007).

These facts are consistent with the Libyan geography and natural resources (oil and gas) and are helping countries take a step further in relations with most of the global economic countries. Libya is located in the heart of the North Africa region, within the Arab Muslim world, having a long coastline with the Mediterranean Sea of about 2,000 km long. Much of it is still in a natural undeveloped state and its total area is 1,759,540 sq km (679,358 sq ml), with a very small population estimated to be 6,089 million in 2007 (see Appendix A). In the east lie Egypt and Sudan as neighbours, whilst Algeria and Tunisia border to the west with Chad and Niger to the south. Given what has been mentioned, one of the most important subjects on the agenda for government policy is economic reform and Libya's reintegration into the international community, which would make it a gateway for an African Union-pan-African body. Libya is a founder member of the 50-state African Union Organisation with strong political and economic ties with its members and is a leading participant in its activities. In December 2007 French President Sarkozy was the first western leader since 2004 to welcome Col. Qaddafi, when the latter took the decision to rebuild diplomatic bridges with a view to ending the country's isolation from the US and Europe. The two parties signed a number of business agreements, such as an accord to develop the peaceful use of nuclear energy and the supply of one "or several" nuclear reactors to desalinate sea water, with deals agreed potentially worth 10 billion € for French firms (BBC News, 2007). After Qaddafi had

made this five-day trip to France he visited Spain (his second official visit since 1984), which included meetings with Prime Minister Zapatero and King Juan Carlos. A number of key agreements were signed with possibilities for investments by Spanish firms in Libya totalling over 17 billion US\$ (11.8 billion €). Beyond this there is the possibility of 2 billion € investment in defence and aeronautics and over 5 billion US\$ in the Libyan energy sector. Other investment enterprises with the Libyan government are anticipated in bids for infrastructure contracts worth in excess of 50 billion € in Libya (AFP, 2007). Finally, Libya and Spain signed a political cooperation accord, whereby the Spanish will help train the Libyan police in migration and maritime border control. After a long period of isolation, Al-Qaddafi opened the Libyan economy to business and investment. Libya, a member of OPEC, holds the largest proven oil reserves in Africa, accounting for greater than 3 *per cent* of the world's total reserves. By 2012 Libya seeks to double its oil output capacity to 3 million barrels a day. Furthermore, it is also seeking to invest about 50 billion US\$ in the US Sovereign Wealth Fund (Kessler, 2008). On 5 September 2008 the relationship between the US and Libya entered an historic *new phase* when Condoleezza Rice become the first US Secretary of State to visit Libya since 1953. She pointed out that: *"We have had a long and bad history with Libya, and that began to turn around when they turned away from nuclear weapons and terrorism. That country has radically changed its behaviour [...] The relationship between [the US and Libya] has been moving in a good direction for some time but we have a long way to go [...] we are working on a trade investment framework which will improve the climate for investment, which I know many American firms want to do"*. She made a further point: *"We are co-operating on Libya's membership of the Security Council of the UN"* (Kellerhals, 2008 and BBC News, 2008). David Welch Assistant Secretary of State, concluded that *"This is a relationship that has had a troubled past, but now it is on a much firmer foundation"*. A further point was made by the president of the Ploughshares Fund, Joe Cirincione: *"We've seen, under the Bush administration, Qaddafi go from a poster child of a rogue state leader to a man that President Bush calls a model that others should follow [...] that is a remarkable transformation. If a Democrat did that, the Republicans would undoubtedly be accusing him of appeasement. Sometimes, it takes a Bush to go to Libya"* (Kelemen, 2008)<sup>2</sup>.

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<sup>2</sup> Cirincione added that *"The Iraq war has proved to be very difficult, costly and unnecessary [...] The Libya model has been cheap, 100 per cent effective, and nobody died [...] This is the right message to be sending to Iran and to North Korea, though those cases are far more complicated than Libya"* (Kelemen, 2008).

From this summary it can be seen that Libya, however, after the lifting of UN sanctions in 1999, opened the oil and gas field to international investors. This increased Libyan income from oil and gas exports, which led the government to introduce a series of liberalisation economy measures including a significant role for deregulation and private sector ownership. As a result, Libya's economic growth rate during the economic reform period was one of the highest in the world. GDP increased at an average rate of 22.6 *per cent* per annum. Furthermore, gross fixed investment had increased at an average rate of 15.6 *per cent* per annum with the share in non-oil GDP reaching 63 *per cent* (CBL, 2007). Therefore, within these financial and political changes in Libyan history, having begun to change from a socialist command economy to a Western-style free market system in which its citizens were increasingly expected to fend for themselves, it is understandable that the newly-established stock exchange has had expectations placed upon it to create buoyancy and growth in the national economy. Even so, as the political history of Libya is somewhat dissimilar from other developing countries, there are certain influences which are peculiar to Libya and which, consequently, require an early evaluation of the performance of its stock exchange. As a result, Libya has launched an economic reform programme as an attractive development option to help sustain the national economy and financial investment.

### **1.3.2 The Need and Viability**

The question arises here as to why Libya has been selected as the case study. In this respect it is vital to appreciate the fact that, like most developing countries, Libya possesses a stock market. However, the Libyan stock market has only very recently been established, in 2006, as a major step in the development of the country's economic reform programme. Its presence will facilitate a better operation of a valuable resource through the development of sound capital market performance. The stock market was established in order to move Libya from being a bank-based to a market-based economy and to contribute towards the capital-raising and capital-allocating process which is critical to increase the economy's growth. In some market-based economies the stock market is a key means of mobilising saving and reallocating resources, acting as a back-up and an assurance for domestic and foreign investment promotion and a significant source of capital formation and business financing.

Many countries of the MENA, such as Lebanon, Israel, Jordan, and Egypt, have established their own stock markets, therefore, it is not surprising that there has been an increasing demand to develop an organised stock market in Libya as well (see Appendix A, Table 3.19).

Without doubt, its overall economic reform initiative has situated the Libyan economy in the closest proximity to a market economy, transforming vital sectors within it. Increased privatisation, liberalisation, further investment, lower inflation and fewer financial regulations mean that the economic growth rate is far better than it was prior to 1999. In 2003-2004, reflecting the favourable developments in the world oil market, Libya's fiscal and current account balances registered large surpluses (IMF, 2005). Privatisation has indeed succeeded in attracting more and more investors, especially from the local market, thus alleviating public spending and adding liquidity. In this context, the need for a stock market to manage this situation is very apparent.

### **1.3.3 Justification for the Research**

Libya's continuing economic reform will lead to a deepening of the Libyan stock market and will aid its maturity, but the absence of an effective stock exchange will deter the transformation of the country from being a bank-based to a market-based economy. Since it has been demonstrated that other emerging economies, whose economic features are very similar to those of Libya, prove the positive outcomes of developing stock markets, there is a rationale for exploring their approaches and learning from their experience, with the intention of proposing a route towards enhancing the development of the newly-instituted stock exchange in Libya. Therefore, the research is justified on economic and national development grounds. The reason for this is based on the growth model of the emerging economy as observed in MENA, Eastern Europe, Asia and Latin America which is similar in many respects to the Libyan economy (see Chapter Nine). Therefore, this critical review explores the emerging economy experience and concentrates on the part played by these countries' respective stock markets. From this review it is observed that, by reforming their stock markets, these countries have achieved significant levels of economic growth. Thus, the case for the development of an effective stock exchange in Libya is made on the assumption that stock markets contribute indirectly to economic growth. Several empirical examples are utilised to support this argument. Egypt, for instance, has developed positively over the last few years, after the Cairo Stock Exchange made significant progress. Consequently, it could be argued that a healthy relationship exists between Egypt's economic development and the advancement of its stock exchange. This hypothesis is supported by Omran's (2002) research findings in Egypt demonstrating that the economy prospered as a result of the development of the stock market along with other factors. These facts are interesting for the proposed study,

since Libya and Egypt, being neighbours in North Africa, possess several historical, cultural and climatic similarities and are connected by transportation and highway networks. Both altered their economic ideology from socialism to capitalism, although they effected this at different times. Libya is lagging behind Egypt in terms of the development of a stock exchange (the Cairo Stock Exchange was created in 1903), but a sharp focus on the relevant developments in Egypt will provide much valuable information and some beneficial lessons for Libya to assimilate in its own economic and financial progress.

Given what has been said in the previous discussion about Libya's unique position as a country, this study can be considered as a step towards the theoretical and empirical building of research methods which will provide a significant contribution to knowledge and understanding of Libya's economic reform programme and the case for a stock market performance for the subject area. The review of literature in this research reveals several gaps and the need for more empirical studies to be conducted. Therefore, this study has given more focus to extend the empirical work in this area with the intention of filling some of the gaps in the literature of Libyan economy in particular and other developing nations in general. This study can also be described as a significant exploratory study that includes crucial issues which can be barriers to understanding or a temptation/requirement to judge some practices as 'better' than others for adoption of effective approaches to the development of economic reform programmes and implementation of successful stock market performance and economic growth. As such, this research is based on two theoretical models. The first one concerns economic reform programmes, macro-economic reform and financial maturity variables related to stock market performance. The second model is based on the best practice transferable model from other emerging stock markets to the Libyan economy. These models are modified to develop the proposed research framework, as illustrated in Chapter Six. Based on the results of this study, the expected outcome of the research may be of value to other countries that have experienced political isolation and/or disturbance and that can provide direction to those embarking upon decisions relating to the development of stock market performance for increase the economic growth. In this respect, the results of the research may operate as a guide.

- This study is one of the first of this type to explicitly investigate the direction of causality (developed model chosen) between Libya and other emerging economies.



- Libya has some similar characteristics to other developing countries that have established their own stock exchanges very recently (for instance Sudan, Yemen, Syria, Iraq and UAE) and this study will make two contributions in this respect. Firstly, the methodology used in this thesis (including the statistical measurement of economic variables and qualitative analysis of the progress of other similar countries) can offer a method for these countries to follow. Secondly, the questionnaire developed as one of the research methods will be available for researchers to adopt with the need to make only slight variations to reflect national situations.
- Libya is still in the early stages of its financial liberalisation and reform, but it is moving quickly as a result of the removal of UN and US sanctions and there are signs of rapid development. However, as yet, there has been no study to explore the readiness of the Libyan financial market for the stock exchange, although this would seem to be an inevitable outcome.
- It provides recommended solutions for stock market problems through suggested effective economic reform programmes to enhance market-based financial systems where the influence of Arab investment on a stock market would be minimised or improved.

Finally, this study's findings will be of help to other researchers and academics who have an interest in Libya's economy, stock market and other facts which could be considered as directions for further work. As a result, the following aims and objectives were determined for this study.

#### **1.4 RESEARCH AIM, OBJECTIVES AND QUESTIONS**

The aim of this research is to determine the most appropriate model for the continued viability of a stock market mechanism in Libya and to consider an appropriate strategy for the Central Bank of Libya to undertake successful continuation of stock market development. To achieve this aim, the following research objectives were formulated.

- Objective 1:** To assess the success of the economic reform programme in Libya, specifically the deregulation, corporatisation, privatisation and liberalisation that has led to the inception of Libyan stock exchange.
- Objective 2:** To identify the benefits of a stock market to the Libyan economy. This involves examining the relationship between macro-economic reform variables and stock market performance variables.

**Objective 3:** To assess the performance of market-based economies, with particular reference to the emerging economy of Libya, and to evaluate current and best practice in financial deregulation.

**Objective 4:** To determine whether best practice from other emerging stock markets is transferable to the Libyan situation and context.

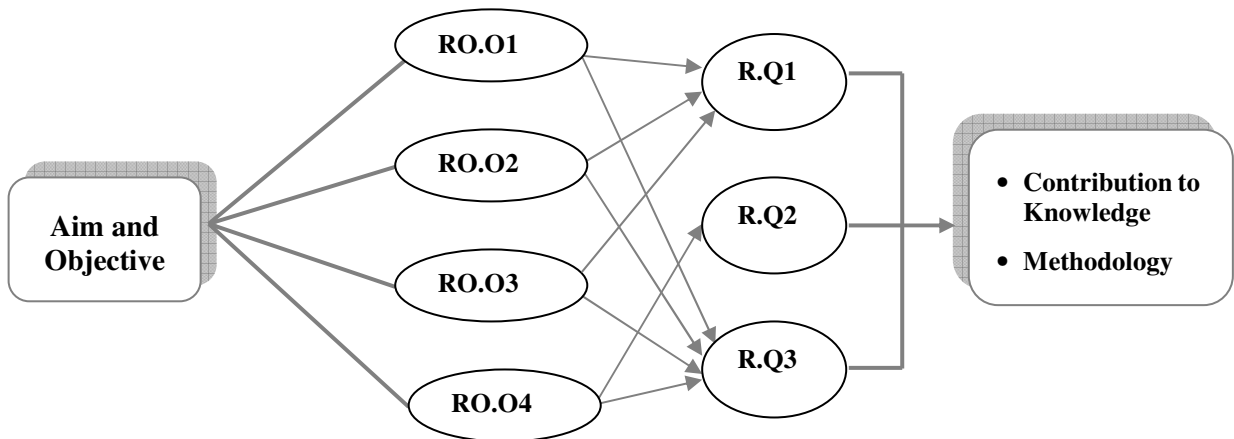
In order to realise the primary aim and objectives of the study, several research questions were designed. The following questions are to be answered by this research.

**Question 1:** Has Libya's reform programme prepared the country for developing a stock market and how effective are the post-sanction economic reforms (1999-2007) in changing the Libyan economy from a bank-based into a market-based one?

**Question 2:** Are the emerging economies' models transferable to the Libyan situation and context?

**Question 3:** What weaknesses in the structure of the Libyan economy may appear in the stock market? What are the main prerequisites for successful stock market performance in Libya?

**Figure 1.1 Questions Related to the Aim and Objectives**



Notice a: Research Objective (RO), Research Question (RQ).

Source: Developed for this research from Section 1.4: Research Aim, Objectives and Research Questions.

In order to achieve the first objective, the economic reform programme of deregulation, corporatisation, privatisation and liberalisation is described via the analysis of descriptive statistics. The findings are then explained in terms of correlations or differences between an

economic reform programme and stock market variables. Semi-structured interviews are also used to explore and explain themes that emerge from the analysis of self-administered questionnaire data. The findings are then compared, when appropriate, with those reported in other countries. In order to achieve the second objective, the relationship between macro-economic reform and stock market performance variables is described in terms of the analysis of descriptive statistics. The findings are additionally explained in terms of correlations or differences between macro-economic reform and stock market performance variables. Semi-structured interviews are used to explore and explain themes that have emerged from the self-administered questionnaire survey. The Libyan findings are then compared, when appropriate, with those reported from various other countries.

In order to achieve the third objective, the aim is to explain and compare the impact of a bank-based system on the market-based system in Libya's transforming economy. This is also described via the analysis of descriptive statistics. The findings are explained in terms of correlations or differences between financial maturity and with particular reference to emerging economies. The semi-structured interviews were utilised to explain why respondents conduct the market-based system in a particular way. The findings are subsequently compared, when possible, with those reported in different contexts. With respect to the fourth objective, regression models were adopted to conduct a comparison between the Libyan context and those in other economies. Moreover, in many cases such a comparison is problematic. A comparison can still be interesting and may be illustrative.

## **1.5 RESEARCH SCOPE**

Libya is still in the early stages of its financial liberalisation and reform, but it is moving quickly as a result of the removal of UN and US sanctions in the last few years, and there are signs of rapid development. However, as yet, to the best of the researcher's knowledge, there has been no study which explores the readiness of the Libyan financial market for the establishment of a stock market. There is currently a lack of published material and, in some areas, the existing literature is rather limited. Therefore, this study provides a contribution to the subject of Libyan economic growth by analysing the data necessary evaluate the success of the economic reform programme and Libya's readiness to complete its transition to a market-based economy. The focus on Libya is of interest for several key reasons. Firstly, the economic reform programme is now at the forefront of the government's agenda. Secondly, the Libyan government has been willing to develop the stock market and its recent policies of

engaging employees and managers alike in striving for reform, ownership change and foreign policy investment. Thirdly, the Libyan experience could provide new insights into the debate on the effectiveness of economic reform programmes and the underlying conditions for success. Finally, a comparison is made between Libya and the other emerging economies in introducing financial deregulation, including in the stock exchange. Ultimately, it is hoped that the study will identify and suggest more about the Libyan economic reform programme and the role of stock market performance in the nation's economic growth.

## 1.6 EMPIRICAL STUDY

The empirical component of this research consisted of two parts. A field study was implemented via a mixed quantitative and qualitative approach, as presented in Table 1.1. For certain aspects of the study, a quantitative strategy was used by the administration of a survey in order to achieve both the research aim and objectives (Cohen, 1992; Miles and Huberman, 1994; King, 2006). For other aspects of the research, qualitative data was obtained through semi-structured interviews (Remenyi et al., 1998; King, 2004; Saunders et al., 2007). A comparison between the situation in emerging market economies and the Libyan stock market was conducted<sup>3</sup>. The data are based on forty-two emerging markets which were obtained from the Emerging Market Database (EMDB) provided by the International Financial Corporation (IFC). Glen and Singh (2003) argue that a comparison of the financing patterns between countries is extremely valuable in analysing the economic reform programmes in developing nations. Comparison of the financing patterns between countries might provide empirical guidelines to execute such economic reform programmes. In this regard, assessing the Libyan economic reforms requires a body of empirical knowledge for providing a comparison with emerging market countries in order to achieve designed levels of stock market performance and to develop Libyan business behaviour.

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<sup>3</sup> Kim and Singal (2000) explained that emerging stock markets are defined by the International Finance Corporation as consisting of stock markets in developing countries (low-and middle-income economies).

Table 1.1 Research Methodology and Objectives

Research Methodology <sup>b</sup>	Objectives <sup>a</sup>			
	1	2	3	4
<b>Data collection methods</b>				
• Literature	√	√	√	√
• Self-administered questionnaire	√	√	√	--
• Semi-structured interviews	√	√	√	--
• Cross-sectional regression (Datastream Database)	--	--	--	√
<b>Data statistical analyses</b>				
• Descriptive statistics ( Means, SD)	√	√	√	√
• Skewness	√	√	√	√
• Kurtosis	√	√	√	√
• Chi-square-based measures	√	√	√	--
• Spearman's Rho	√	√	√	√
• Hypotheses test	√	√	√	√
• Multiple regression model	√	√	√	--
• ANOVA	√	√	√	√
• Coefficient	√	√	√	√
• Collinearity diagnostics	√	√	√	--
• Two stage least-squares model	--	--	--	√

Notice a: The objectives of this research are discussed in Section 1.4 including the research aim.

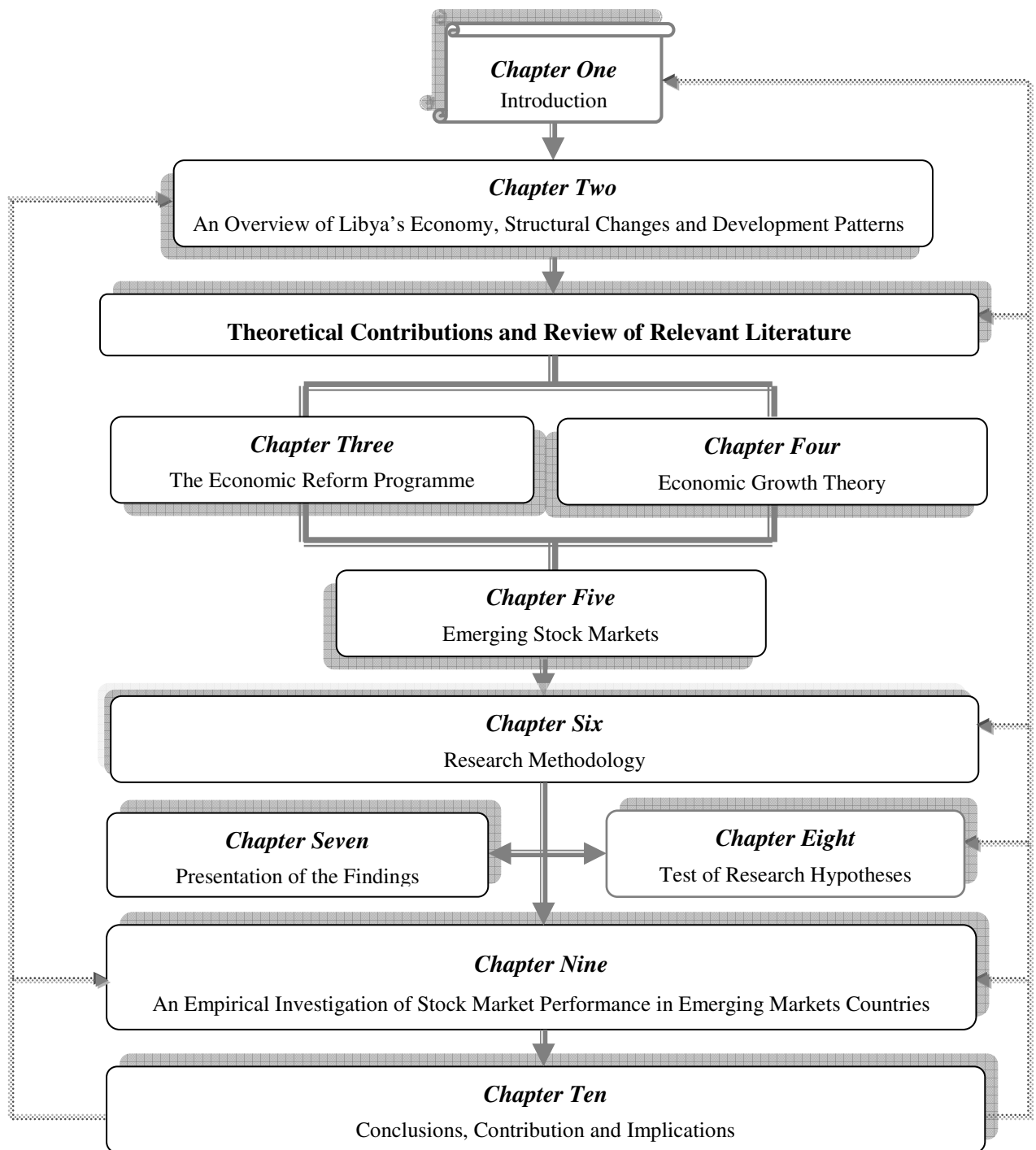
Notice b: A tick (√) indicates that the data collection method or statistical analysis was used in achieving a particular result from research objective.

Source: Developed for this research from Chapter Six: Research Methodology.

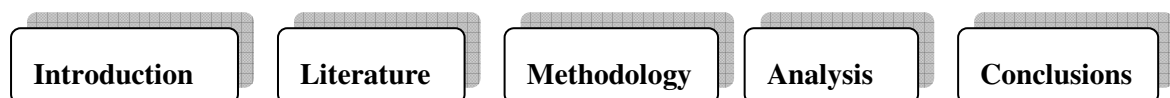
## 1.7 STRUCTURE OF THE STUDY

The thesis contains nine chapters, including this one, and is divided into three sections, as shown in Figure 1.2. *The first part*, a review, is theoretical in nature and continues with an introduction and literature review which provides extensive coverage of the theory and literature concerning economic reform programmes and macro-economic performance, stock market performance and economic growth. *The second part* is more empirical in nature and discusses the research methodology that was applied in undertaking this research. *The third part* describes the empirical studies and comprises the last three chapters, offering a discussion and analysis of the research, its conclusions and suggestions for further research.

**Figure 1.2 Flowchart for Thesis Navigation**



### Key Chapters



Source: Developed for this research from Section 1.7: The Structure of the Thesis.

## CHAPTER TWO

# AN OVERVIEW OF LIBYA'S ECONOMY, STRUCTURAL CHANGES AND DEVELOPMENT PATTERNS

### 2.1 INTRODUCTION

After highlighting the purpose of this research study, discussed its background and explained the structure of the thesis in Chapter One, this chapter introduces the main characteristics of the Libyan economy and the changes that have taken place within it since the country became independent in 1951. There is also a focus on the 20-year period prior to the current time, when Libya was affected by economic sanctions imposed by the US and the UN. An assessment is made of the extent to which the Libyan bank-based economy has been transformed into a capital market. The chapter is set out as follows: Section 2.2 provides the historical background and geography of Libya, and in section 2.3 the basic characteristics of the country's economic reform programme are presented. Section 2.4 addresses the financial system, placing special emphasis on the Libyan stock market under the economic reform programme umbrella and, finally in section 2.5, a summary and conclusion are provided.

### 2.2 HISTORIC BACKGROUND IN LIBYA

The historical background in Libya can be discussed from two angles: geography and population; politics and economy. These two perspectives are now considered subsequently.

#### 2.2.1 Geography and Population

The Great Socialist People's Libyan Arab Jamahiriya, still generally known as Libya, is located in the heart of North Africa besides the Mediterranean Sea, between Egypt to the east, and Tunisia and Algeria to the west. Sudan, Chad and Niger are to the south. The area of Libya is about 1,759,540 sq km (679,358 sq ml) and there is a coastline of some 2,000 km. It is the fourth largest country in Africa, the seventeenth largest in the world and is seven times the size of the UK. The climate is moderate in spring and autumn, summer tends to be very hot, whilst the winter is cold. The country is subject to a diverse climate with the Mediterranean Sea in the north and the desert climate of the south. Likewise, Libyan comprises desert (45 *per cent* with 25 *per cent* sand dunes), the rest being arable land (19 *per cent*), permanent crops (17 *per cent*), pasture (20 *per cent*) and forest (4 *per cent*) (UNEP, 2002). In fact, Libya is rich in natural resources (oil and natural gas) and other areas of iron ore, Sebeka salts and pastures.

Agriculture and fishing are the key industry sectors outside the oil and gas sectors (see Appendix A, Table 3.2). Finally, Libya's geographical location has aided the growth of trade networks and exchange of goods and products between Europe and Central Africa via Libyan local areas, such as coastal towns and oases (see Figure 2.2). The geographical location of Libya renders it a strategic link between eastern and western nations (see Figure 2.1).

**Figure 2.1 The Libyan Geography and Location**



Source: Libya Location Map (2008).

The population increased during the last decade from 3,225.1 thousand in 1980 to 4,524.4 thousand in 1990, 5,426.8 thousand in 2000 and, finally, reached an estimated 6,089 million in 2007 (IMF, 2007). The annual population growth rate during the period 1975-2005 was about 2.9, due to improved standards of living, and is expected to be 1.9 *per cent* during the period 2005-2015, as reported in Appendix A, Table 3.1.

### **2.2.2 Political and Economic**

As mentioned previously, historical records indicate that the name 'Libya' is indigenous (i.e. Berber), the country being known as *Libu* in ancient Egyptian texts, a name referring to one of the Berber tribes living west of the River Nile in Egypt thousands of years ago. Given Libya's location at the strategic crossroads of Europe, Africa and the Middle East, it should come as little surprise that its history has been one of successive invasions. From the 10<sup>th</sup> century BC the Phoenicians inhabited the west of the country. The Greeks referred to the tribesmen as *Libyes* and the country became 'Libya'. It was also mentioned by ancient Egyptians during the era of Ramses II (1298-1232 BC). In the 6<sup>th</sup> century BC Carthage rose to prominence as a mighty state, and continued so until the 2<sup>nd</sup> century BC, when it was overthrown by the Romans. In the 5<sup>th</sup> century Libya was seized by the Vandals and in the 6<sup>th</sup> century it fell under the control of the Byzantines. In the 7<sup>th</sup> century Muslim Arabs conquered Libya. By the beginning of the 15<sup>th</sup> century the Libyan coast had minimal central authority and its harbours



were havens for pirates. Khdduri (1963) explained that, in 1550, in order to protect the Islamic faith from Christian Spain, the Muslim lands of Libya, Tunisia and Algeria invited the Ottoman Sultan to extend his control to their countries. The Turkish occupation began in 1551 and lasted until 1835. Simultaneously, Algeria was occupied by the French and Egypt almost achieved independence. In 1843 the Sanussi Order settled in Cyrenaica at the heart of the Bedouin tribes. By 1894 they moved to Al-Kufrah oasis from the Jaghbub oasis to control the Sahara trade routes, which passed through Zawaya. As Figure 2.2 shows, the highest degree of political and historical movement occurred within this period.

**Figure 2.2 Political and Historical Landmarks**



Source: Developed for this research from Subsection 2.2.

<i>Libya's Ancient History</i>	
Libyan Roman	430 BC (4 <sup>th</sup> century)
Eastern Libyan Greek	613 BC (7 <sup>th</sup> century)
<i>Mediator Libyan History</i>	
Islamic Conquest, of which:	
Aghlabid	909-910
Fatimid	1016-1062
Al-Unification	1158-1230
Spain	1510-1530
<i>Libyan History Modern</i>	
Ottoman Era I	1551-1711
Karamanli Rule	1711-1835
Ottoman Era II	1835-1911
<i>Contemporary Libyan History</i>	
Italian Invasion	29 September 1911
The execution of Omer al-Mukhtar	15 September 1931
World War I	1915
World War II	1940
Italy Defeated	1943
British and French rule	1945-1951
Independence	1951
Cancellation of Federal System	1963
United Kingdom of Libya	1951-1969
Revolution of 1 September	1969

The weakening of the Ottoman Empire led to the first Italian War against the Turks in 1911. In 1912 Italian sovereignty was recognised and control of most of the land was established. Libyans, however, continued to fight the Italians until 1914. In 1949 the UN voted that Libya should become an independent country and consist of three separate areas: Tripolitania, Cyrenaica and Fezzan<sup>4</sup>. On 24 December 1951 the political policy became part of the United Kingdom of Libya. The new nation became a monarchy ruled by King Idris between 1951 and 1969. His political leadership derived from his role as a leader of the religious movement established by his family under the name of the Senussi Order. During the early years of

<sup>4</sup> In this context, Tripolitania is today called Tripoli; Cyrenaica is Burka, and Fezzan is unchanged in name.

independence in 1951, the Libyan economy was under-developed and dependent upon British and US military treaties. For instance, per-capita income was between 30 and 40 million US\$ per annum. Given this low rate the levels of nutrition and health-care were severely affected. The Libyan birth rate was additionally low at about 5.3 *per cent* in 1952. The natural rate of population decreased to 1.1 *per cent* due to a death rate of 4.2 *per cent*, which was affected by the low standards of healthcare. In 1958 oil was discovered in Libya and by 1962 exports had commenced. Appendix A (Table 3.2) indicates the significant related contribution of the economic sector to GDP during the first nine years following independence and the ten years preceding revolution. On 1 September 1969, 27-year-old Muammar Al-Qaddafi deposed King Idris and revolutionised the country. The following main sections explain how the Libyan political situation altered and the manner in which the economy improved.

### 2.3 BACKGROUND TO THE LIBYAN ECONOMIC REFORM PROGRAMME PERIOD

After twenty years of political chaos<sup>5</sup>, and nearly three decades of central planning control of its economic system, Libya launched an economic reform programme under the framework of economic privatisation (UN, 2002). Since 1999 the Libyan government has been gradually implementing measures to reform and to follow an *open door policy*. These efforts are aimed at altering the country's state-controlled economy to a more market-oriented one in order to integrate it into the global economy, restructuring the economic mechanism from central administrative planning to mostly market-driven pricing and exposing the economy to the world through trade (oil exports and imports) and foreign investment.

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<sup>5</sup> On 27 March 1982 the US declared an embargo of the Libyan economy. The Reagan administration banned imports of Libyan oil to the US and halted all export services to Libya, other than food and medical supplies. In 1986 the embargo was expanded. In January Reagan ordered the freezing of Libyan assets in the US. In April 1986 Washington launched a series of air raids against targets in both Tripoli and Benghazi, which killed 101 people and struck Qaddafi's house, killing his adopted daughter, partially in an attempt to kill him. In June 1986 the US government banned exports to third nations of goods and technology destined for use in the Libyan oil industry. With the expansion of the embargo during 1986 all US companies withdrew from Libya with their assets frozen by Libyan authorities. 27 March 1987 saw liberalisation of the economy and loosening of the socialist structure policy. In September 1987 Libya lost its occupied territories in north Chad. In December 1988 Pan Am flight 103 exploded over Lockerbie in Scotland. In the 1990s the disagreement between Libya and the US escalated. Furthermore, as a result of changing international circumstances of the post-Cold War area, the US organised internationalisation of the conflict. In April 1992, the UN Security Council, led by the US, adopted Resolution no.731 and 748 which imposed a ban on civil aviation, a worldwide embargo on arms purchase and a reduction in Libyan diplomatic missions abroad. On 11 November 1993, the UN Security Council voted by *eleven to zero* to tighten the sanctions against Libya with Resolution no.883. For further information, see (Altunisik, 1996 and Appendix A 2.2).

### 2.3.1 Lessons and Challenge

Economic reform programmes have become the new phenomenon during the past two decades. Libya, Egypt, Tunisia, Jordan and Saudi Arabia, akin to most developing countries, shared similar experiences whilst striving to achieve the stabilisation of their economies. They did so because they found themselves incapable of earning sufficient foreign exchange to protect their currencies. Indeed, many of these nations began transforming their situations from socialist, state-owned entities to market-based economies (Frances and Garnsey, 1996). During the early 1990s for instance, Libya launched a market-based system which transformed it from being centrally planned as the public sector grew under the umbrella of socialist transformation and bureaucratic procedures controlled by laws and resolutions issued during the early 1970s and late 1980s. Leasing, however, provided opportunities for the introduction of managerial and technical skills that would allow the use of knowledge, ability and vitality value in a more efficient way within the lease duration. Libya, therefore, is developing an economic policy to improve management of the most productive public enterprises and to address the privatised ownership enterprises. The primary challenges facing Libya's are discussed in the following subsection. This is followed by an explanation of the outcomes of an economic reform programme.

#### 2.3.1.1 *Acceleration of the Transition to a Market Economy*

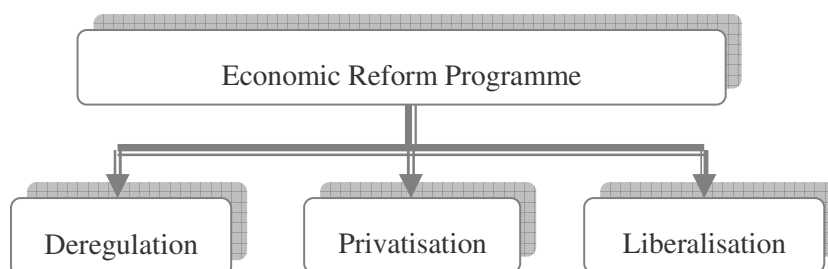
In light of the previous discussion, Libya requires a comprehensive medium-term strategy policy to reform its economy and to make better use of its economic advantage and financial potential, through diversification of the economy and reducing the country's reliance on the oil sector. The proposed strategic policy aims to maintain macro-economic performance stability and rational use of the country's oil wealth, accelerating the transfer to a market-based economy and laying a solid foundation for development of the non-oil economy. The essential steps towards the restoration of confidence of the private sector and enhancing the country's economic potential, requires a sound macro-economic framework sending clear signals to the market underlying the commitment of the authorities to reform. IMF technical assistance has been provided<sup>6</sup> in order to implement the necessary reform measures. To achieve this, priority should be given to the major steps leading towards an economic reform programme. In this research, as shown in Figure 2.3, these three characteristics are investigated, along with a

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<sup>6</sup> The IMF has already provided technical assistance in the areas concerned with monetary policy and bank restructuring, banking supervision, tax policy, revenue administration and statistical activities (IMF, 2006).

liberalisation programme, a variable which was not taken into consideration in any of the economic reform programme research.

**Figure 2.3 Potential Economic Reform Programme**



Source: Developed for this research from Subsection 2.3.1.1: Acceleration of the Transition to a Market Economy.

### **2.3.1.1.1 Deregulation Programme**

The Libyan government initiated a change by passing new laws and regulations to motivate and organise the activities of the private and co-operative ownership of productive enterprises, as well as the shareholding companies<sup>7</sup>. This new form of ownership (i.e. in medium and small-scale industries) is known as “tashrukiya”, an arrangement between private sector and state ownership, whereby each worker would share in capital and profit. This commenced with the significant reform law no.8 of 1988 concerning a number of economic activities which were allowed for the first time in 1977, when the private sector and investment limited and the economy also was under control. It was followed by law no.9 in 1992 on the practice of the Libyan business environment which allowed the establishment of joint-stock companies called “*sharikah musahimah*”. Nevertheless, neither of these laws was sufficiently adequate to motivate the private sector as they merely caused a small growth in the service and crafts sector, while more critical sectors remained on hold. By the second half of the 1990s and the beginning of this century, another group of laws and regulations were passed by the GPC with the aim of expanding the role of the private sector, establishing private banks, adopting the liberalisation of the wholesale trade and directing its activities towards economic reform. These laws were additionally aimed at attracting foreign capital and achieving the required financial stability of the Libyan economy, as discussed. The following regulations provided most significant contribution to the Libyan economy.

<sup>7</sup> According to La Porta et al. (1998) most MENA nations, particularly the North African countries, adopted the French law principles in their commercial law, as agreed by Kilani (1988) wherein Libyan commercial law has been based on the principles of French law. In Libya, therefore, during 1953 commercial law was issued in order to regulate economic and business activities. Libyan commercial law divided business into four types: simple limited partnership; general partnership; limited partnership with shares; joint stock companies.

- a) Law no.8 of 1988 is based on sentences related to economic activity. This laid the basis for restructuring the Libyan economy. The first clause allowed individuals to separately or co-operatively practise economic activities, including the distribution of products and services, which were in the past limited to public companies. The second clause addressed individuals, families, land ownership and factories, etc. The fourth clause asserted the application of commercial law and its affiliated regulations and decisions taken on issues which were not covered in law.
- b) Law no.1 of 1993 concerns banks and credit finance, replacing the banking law of 1963. This permitted the private ownership of commercial banks, besides allowing citizens to establish co-operative companies (banking companies), on condition that a company's capital was about 10 million LD<sup>8</sup>. It also permitted foreign banks to establish their representative agencies and offices in Libya and allow foreigners to acquire and maintain bank accounts in a foreign currency. Clause 13 of this law dictated that the Central Bank would be responsible for buying, selling and guaranteeing bonds and stock issued by the general treasury, payable within a 15-year period (at least).
- c) Law no.21 of 2001 defines the minimum limit of shareholders in shareholder companies, where it had become permissible to establish a shareholder company with 25 shareholders, if the total capital did not exceed one million LD. This positive step facilitated the establishment of shareholder companies for individuals, as cancelled law no.8 in 2001 had assumed a minimum of 500 shareholders for the establishment of a shareholders' company, which presented an obstacle against the formation of such companies.
- d) Law no.1 of 2004 focuses on the addition and adjustment of a number of rulings of law no.21 of 2001 on various economic activities. The former facilitated the establishment of shareholding companies by enabling them to issue carrier stock not only in name. It is further expected that these companies will be allowed to lower the minimum limit of shareholders and increase the percentage of individual holdings, in contrast to previous numbers decreed by law no.100 for 2001.
- e) GPC Resolution 134 of 2006 concentrates on the establishment of the Libyan Stock Market (LSM) and the issuance of the assets system. The establishment of the LSM is a major step on the path of developing financial resources via the development of a sound

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<sup>8</sup> Libyan Dinar (LD) denotes the Libyan currency and US\$ denotes the US Dollar.

capital market which is a critical issue and is discussed in detail in Subsection 2.4.3: Initiatives for a Libyan Stock Market.

On the whole, as shown in the previous discussion, the new economic reform stipulated the establishment of shareholding companies which are relied upon to lead economic reform in all sectors. The entire process lasted more than 12 years before reaching the current state, commencing with law no.9 in 1992, followed by law no.8 and no.21 in 2001, and law no.1 in 2004. All the aforementioned laws facilitated the establishment of shareholding companies, allowed the issuance of stock in their carriers' names, lowered the minimum limit of shareholders and increased the individual's share as opposed to levels previously dictated by law no.21 in 2001.

### **2.3.1.1.2 Privatisation Programme**

Privatisation became one of the primary policies adopted by the IMF and the World Bank as part of its economic reform and structural adjustment programme to remedy deteriorating economic conditions, especially in developing nations. However, transfer of ownership in Libya began in 1987 by sharing the returns on investment with employees; profits were divided among the various elements of production (worker, machine, capital) according to a specific accounting system. The transfer was governed by the People's Committee Resolution no.447 of 1987, based upon a chapter from the Green Book (Partners not Workers), law no.9 in 1985 and GPC Resolution no.313 of 2003. The number of transformed units reached 295; the value of their assets equalled 98,000,000 LD. The transformation process continued from 1987 to 1992, as shown in Table 2.1. This saw many positive results, such as the retrieval of 75 *per cent* of the assets' value owned by these units, including the transfer of 30,000 products to the national sector.

**Table 2.1 Transfer of Ownership of a Number of Factories and Production Units, 1987-1992**

<b>Economic Sector</b>	<b>Number of Units</b>	<b>Value of Assets</b>
Industrial	150	52,000,000
Agricultural	50	6,000,000
Marine fisheries	50	29,000,000
Livestock	45	11,000,000
<b>Total</b>	<b>295</b>	<b>98,000,000</b>

Source: GPC Decision no. 313 in 2003 approving the public sector's restructuring programme.

Following cessation of the 1992 transfer process there was an eight-year gap until it resumed with the subsequent GPC decree no.313 in 2003 approving the public sector's restructuring

programme and enhancement of the ownership base. The Committee additionally issued the list of designated public companies and economic units no.31 of 2003, including a time frame for the transfer process guided by a legal and administrative framework concerning partial and overall levels. Ownership was transferred from 360 economic units into agricultural, industrial, livestock and marine fishery sectors; the value of their total assets equalled 8 million LD, and 100,000 plus employees worked in these economic units. This programme was executed over a period of time between 2004 and 2008 in three stages, as illustrated in Table 2.2.

**Table 2.2 Number and Classification of Units that will be Transformed between 2004 and 2008**

Economic Sector	First Stage	Second Stage	Third Stage	Total
Industrial	145	41	18	204
Agricultural	28	4	24	56
Marine fisheries	11	0	11	82
Livestock	16	1	1	18
<b>Total</b>	<b>260</b>	<b>46</b>	<b>54</b>	<b>360</b>

Source: Production affairs transfer of ownership in Libya (2004).

### **2.3.1.1.3 Liberalisation Programme**

During the past five years Libya has witnessed many changes. Until recently the country had no private sector and foreign entities could not own or lease property from individuals and there was a state-controlled monopoly on the purchase and distribution of consumer goods (US Commercial Service, 2006). In 1987 the initial signs of economic liberalisation allowed the Libyan government to quietly found the *Tacharukiyat* activity (Joint Stock Company). Subsequent regulations allowed for '*economic practice activity*' and the establishment of private banks. Since 1992, when the regulation on privatisation was issued, the sale of state property of the Libyan government was permitted. Many sources point to Act no.5 of 1997 which encouraged foreign investment, a landmark event that defined the conditions for foreigners investing in Libya.

On 1 January 1998 the Libyan government signed several agreements for foreign trade. One of these signalled the great free Arab market, which started to eliminate customs fees on Arab commodities. Within a decade it was expected that there would be free movement of trade among the countries that signed this treaty. Libya then began to exempt Arab commodities from all customs fees and officially submitted an application in 2001 to join the World Trade Organisation (WTO) (Alfaris, 2003). The WTO's aims are to continue the world General

Agreement on Tariffs and Trade (GATT) in agreeing international trading rules and furthering the liberalisation of international trade (Goldstein et al., 2007). WTO membership assures access to the entire world market for Libyan manufactured products. This will encourage Libyan production in industry, agriculture or services under competition with foreign products in the Libyan market including intellectual property rights and institutions to promote greater trade and investment. The aim of this opening to the external world is to increase the efficiency of foreign production facilities and create competition within the Libyan market.

By 1999 considerable changes in the economy started to occur, specifically within the banking sector. The most critical step was the adoption of the BPC resolution no.1 in 1999 concerning banking law and credit currency. However, laws were issued from the trade economy organisation. Most recently, in 2003, the Libyan President, Colonel Al-Qaddafi, described the socialist experiment as a failure, calling for privatisation of the public sector, including the oil industry and the banking sector. He also called for the application of the alternative, social capitalism, in the form of companies owned by Libyan citizens. These new entities had the right to utilise foreign expertise in order to liberate the Libyan economy. In September 2005, he asked the public *“With the exception of oil, show me what other goods are produced by Libyans and which can draw money to the country?”* (Porter and Chairman, 2006: 10). He further stated *“We have considered how to raise the income of Libyan citizens [...] we have to engage in trade. We have to produce and make a profit.”* (Porter and Chairman, 2006: 10). However, he arrived at the conclusion that *“the stability of the regime was threatened”* (Altunisik, 1996). Hence, the economic reform programme was concomitant with political policy reform.

### **2.3.2 MACRO-ECONOMIC REFORM PERFORMANCE**

The challenges of devising a strategic policy were aimed at achieving a sustainable development of the Libyan economy. One of the main factors that consolidate this fact is that annual population growth rate during the period 1970-2000 was about 3.8 *per cent* due to improved living standards (CBL, 2000). However, measuring the success of the economic reform programme in the Libyan economy is via macro-economic reform variables: exchange rate, interest rate, inflation rate, budget deficit, per capita income and GDP growth, as Table 2.3 displays.



**Table 2.3 Measuring the Macro-economic Reform Programme in Libya, 1999-2004**

Macro-economic Reform Variables	1999	2004	Change
Exchange Rate (million LD)	3.1	1.31	0.81
Interest Rate ( <i>per cent</i> )	2.7	5.5	2.8
Inflation Rate ( <i>per cent</i> )	3.5	-1.1	-4.6
Budget Deficit (billion LD)	3.1	2.4	-0.7
Per-capita Income (thousand LD)	3.1	4.2	1.1
GDP Growth Rate ( <i>per cent</i> )	1.1	4.3	3.2

Source: IMF, Country Report no.05/83, Washington D.C. March 2005.

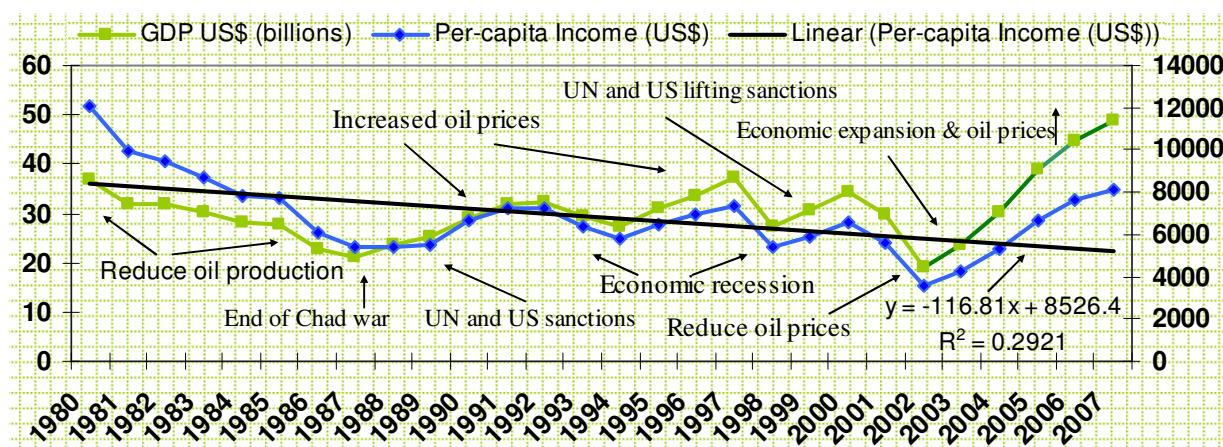
As shown in Table 2.3, the rate of changes in these variables was dramatic between 1999 and 2004. For instance, there is a longer budget deficit and real GDP rose by 3.2 *per cent* as a result of the privatisation of many state-owned companies. The economic reform programme was fruitful in Libya in that these changes of variables transformed the nearly-paralysed economy of the sanction period to one that is better performing. Further, the classification of macro-economic reform development extends to six main types: exchange rate; interest rates; inflation rate; budget rate; balance of payment; per-capita income; GDP growth rate. How do these variables have a positive impact on stock market performance variables and how significant is the sound performance of the stock market to any economy? Was growth rate improvement assisted? The indication variables will be addressed in Chapters Seven and Eight.

### 2.3.3 The Results of Economic Reform Programme

As already indicated, the challenges mentioned are beginning to be addressed. For instance, the pace of economic and structural reform has improved since the lifting of the UN and US trade sanctions when other developing countries' rates grew worldwide with an average annual growth rate of real GDP around 0.3 *per cent* since 1999. This means that real Libyan GDP was 5.5 *per cent* times its 1999 value in constant prices by 2007 (see Figure 2.4). Libyan real GDP per-capita also increased by 4.7 *per cent* during this period. At the same time, the increasing openness of the national economy meant that domestic growth was accompanied by oil exports. In 1999 total exports were relatively small at less than 36,822 million LD. Reform accomplishments include the passing of laws to encourage private investment, both domestic and foreign, the abolition of customs duty exemptions enjoyed by public enterprises, and the reduction of customs duties. Clearly, Libyan exports increased at an average annual growth rate of 13 *per cent* largely shifting from primary products to manufacturing. By 2004, total Libyan exports had reached over 208,483 million LD, while imports during this period, grew at much the same rate, on average. These increased from 19,286 million LD in 1999 to 82,552

million LD in 2004 in real volume terms. The opening of its doors to the outside world, especially to European countries, prepared Libya for thorough involvement in the global economy, thus rendering Libyan economic policy more relatively significant in the international economy framework.

**Figure 2.4 Percentage of Real GDP Growth and GDP Per-capita in US\$, 1980-2007**



Source: IMF, WEO Database, April 2007.

### 2.3.4 Foreign Direct Investment in the Libyan Economy

Since 1997, the Libyan government has actively sought and encouraged an increase in foreign private investments. Law no.5 of 1997 and its amendment in 2003 by law no.7, which offered many incentives and numerous guarantees to attract foreign business to participate in realising economic development in Libya, created a new website [www.investinLibya.com](http://www.investinLibya.com). The aims of this law, specified by article one, included: transfer of modern technology to expand the Libyan technical system; diversification of income sources; contribution to development of national products for international markets. Table 2.4 illustrates the distribution of Foreign Direct Investment (FDI) among the various economic activities. In 2000 the total FDI in Libya reached 189,150 million LD and then declined to 121,323 million LD in 2002. In 2005 it had reached 521,333 million LD, with an annual growth rate of 143.9 *per cent* from 2000 to 2005. As for the distribution of these investments among the various non-oil sectors, the following facts can be depicted.

- The industrial sector occupies first place in attracting FDI. In 2000, 65 million LD was invested in this sector, which comprised 34.4 *per cent* of total direct foreign investment. This figure rose to 73,636 million LD or 60.7 *per cent* of total investment in 2002 and, finally, amounted to 399,136 million LD or 76.6 *per cent* by 2005.

- The tourism sector ranks second in attracting FDI. In 2000 the total incoming investment for this sector was 124,150 million LD. In other words, this represented 65.6 *per cent* of total FDI that year. By 2003 incoming investment decreased to 112,498 million LD, the equivalent of 60.3 *per cent* of total FDI.
- In third position for attracting FDI is the health sector. Investment here reached 29,636 million LD, or 24.4 *per cent* of total FDI in 2000 and rose to 65,600 million LD, or 12.65 *per cent*, in 2005.
- FDI in the service sector reached 17,401 million LD, or 14.4 *per cent* of total FDI and increased to 51,872 million LD, or 9.9 *per cent* of total investment, in 2005.
- FDI in the agricultural sector was 65 million LD in 2002, which was equivalent to 0.5 *per cent* of that year's total FDI. By 2005 this figure rose to 4,725 million LD, or 0.9 *per cent* of total FDI.

**Table 2.4 Development in the Size of FDI in Economic Sectors, 2000-2005***(Million LD)*

Years \ Sectors	Industrial		Agricultural		Tourism		Health		Service		Total
	Value	%	Value	%	Value	%	Value	%	Value	%	Value
2000	65,000	34.4	NA	NA	124,125	65.6	NA	NA	NA	NA	189,125.0
2001	14,763	100	NA	NA	NA	NA	NA	NA	NA	NA	14,763.0
2002	73,636	60.7	0,650	0.5	NA	NA	29,636	24.4	17,401	14.4	121,323.0
2003	33,979	18.2	NA	NA	112,498	60.3	30,175	16.2	3,557	3.3	108,209.0
2004	155,047	83.4	4,960	2.7	NA	NA	10,556	5.7	15,190	8.2	185,753.0
2005	399,136	76.6	4,725	0.9	NA	NA	65,600	12.6	51,872	9.9	521,333.0

Source: Investment Enhancement Agency, Annual Reports (2000-2005).

Finally, the size of FDI is still limited for the various economic sectors. This is related to the investment environment that is constricted by the burdens of administrative organisation and bureaucracy; privatisation is very slowly progressing and the infrastructure is inadequate. This is in addition to the fact that the local market has yet to develop appropriately.

## 2.4 FINANCIAL SYSTEM

Demirgüç-Kunt and Levine (1999) examined the relationship between the financial development and financial structure of more than 150 countries. They used a large selection of indicators that measure the activity, size and efficiency of financial intermediaries and stock markets. Their studies provide international comparisons regarding economic development and banking, non-banking and stock market development. According to their analysis, Libya's financial sector is still forming among countries that have financially and economically

developed<sup>9</sup>. An analysis of the financial sector is now provided in the following three sections which consider respectively: the development of the banking system (currency market), monetary policy, and the establishment of the Libyan stock market.

### **2.4.1 Development of the Banking System**

The establishment of banks in Libya began gradually until an agriculture bank was founded in Tripoli in 1901 during the rule of Hafidh Pasha (1900-1905) with several branches inside the Tripoli governorate; the Othman Bank established two branches in Libya, the first one commenced business in Tripoli in 1906 and continued until 1913, while the second began business in Benghazi in 1911. These two branches stopped practising their banking activities in 1912 because of the Italian occupation of Libya in 1911 (Masoud, 1989). In 1951 the CBL was established, called the Monetary Authority (MA), under the supervision of the Ministry of Finance (MF). However, in 1956 the MA changed its name to the CBL (CBL, 2005). The CBL had its headquarters in the capital city of Libya (Tripoli) and included three branches nationally: Benghazi, Sirte and Sebha. By the end of 2006 the capital of CBL was 500 million LD and total assets of 83.682 billion LD were recorded (CBL, 2006). In the late 1950s and early 1960s Libyan bankers learnt from other international banks, such as those of the UK, the US and Italy who represented the successful banking operators in Libya at that juncture.

Since the 1969 Revolution most of Libya's financial institutions were subsidiaries of foreign organisations, mainly overseas banks. In December 1970, liberalisation of the Libyan banking system occurred. The Libyan sector is mainly in the hands of the public sector, which represents 90 *per cent* of national banking activities and business. Prior to the start of privatisation, there were three banks: the National Commercial Bank (NCB), Jamhouria Bank (JB) and Umma Bank (UM) including shares in the capital of Wahade Bank (WB) of 87 *per cent* and Sahara Bank (SB) 82.7 *per cent* (IMF, 2006). The private sector owns four banks: the Bank of Commerce and Development (BCD), Aljma'a Alarabi Bank (AAB), Alwafa Bank (AB), Aman Bank (AB) and one mixed bank, Regional Banking Corporation (RBC), plus a further 48 small regional banks. The specialised banks are, Libyan Foreign Bank (LFB), Agricultural Bank (AB) and Saving Real Estate Investment Bank (SREIB). Table 2.5 reveals

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<sup>9</sup> Samuels (1981) provided five characteristics to identify the repressed financial sector: interest rate ceilings; high reserve requirement on bank deposits; compulsory credit allocations by way of quantitative ceiling; subsidised loans; unaccountable lending institutions.

the distribution of approximately 269 branches and agencies of the commercial banks in Libyan financial institutions.

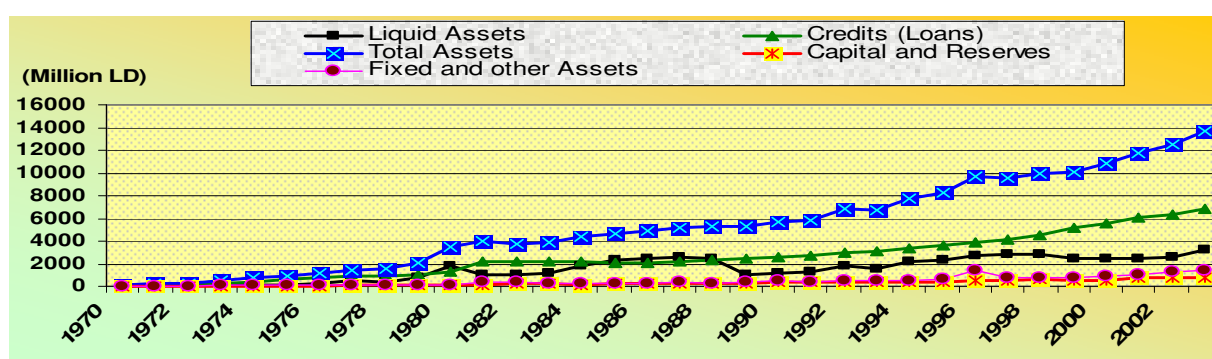
**Table 2.5 Number of Libyan Commercial Banks' Branches and Agencies**

Municipalities	NCB	WB	UB	JB	SB	BCD	Total
Benghazi	5	14	3	7	8	2	39
Jabel Algebee	5	9	7	7	1	NA	29
Jabel Akhdar	14	10	1	6	5	1	37
Sebha	7	1	5	7	4	NA	24
Sirte	7	12	9	11	4	2	45
Tripoli	15	16	18	22	11	2	84
Zawia	5	7	7	6	6	1	32
<b>Total</b>	<b>58</b>	<b>69</b>	<b>50</b>	<b>66</b>	<b>39</b>	<b>8</b>	<b>290</b>

Source: Alqadafi (2002).

Development of the commercial banks operating in Libya during the period 1970-2003 is shown in Figure 2.5, which shows that liquid assets increased from 31.9 million LD in 1970 to reach 32,651 million LD at the end of 2003. The balance of promissory notes and permission of the local treasury amounted to 14,377 million LD at the end of 1995; the value of fixed and other assets amounted to 312 million LD in 1970 and grew to 13,955 million LD at the end of 2003.

**Figure 2.5 Indicators of the Development of Commercial Banks in Libya, 1970-2003**



Source: CBL (1980, 1999, 2005)

## 2.4.2 Monetary Policy

The CBL is equipped with the usual monetary instruments. It is the sole issuer of currency; it re-discounts bills for banks, administers gold and foreign exchange reserves, regulates all financial institutions, establishes the level and structure of interest rates and controls the quantity and quality of bank credit. Growth rates over the period 1962-1982 involved a swift expansion in bank credits to the private sector. This increased (in real terms) at an average rate of 15.6 and 21.5 *per cent*, respectively, over the two oil boom periods (CBL, 1985). Specialised Credit Institutions (SCI) were established by the CBL to provide medium and

long-term credit to the government institutions and liquidity credit to commercial banks for the financing of development projects in various Libyan economic sectors, particularly agriculture, industry and housing. The specialised credit institutions comprise the Libyan Arab Foreign Bank (LAFB), the Agriculture Bank (AB), the Savings and Real Estate Bank (SREB) and the National Development Bank (NDB). Throughout this period the goals of monetary policy were to reduce inflation, promote economic growth, mobilise domestic savings into productive investments and stabilise the LD. In order to promote economic growth and combat inflation, the CBL began the policy of limiting credit to consumer goods and increasing credit to productive projects. As these favourable developments and the monetary policy were adopted, it was a narrow M1 money supply, which included the currency in public circulation, and the demand deposits in LD, which had declined from 46.6 *per cent* in 1970 to 27.5 *per cent* in 1982 (see Table 2.6).

**Table 2.6 Changes in Money Supply and Factors Affecting, 1970-1990**

(Million LD; Constant Price)

Factors	1970	1973	1975	1980	1982	1988	1990	1970 1982	1983 1990
Net Claims on the Public Sector	277.0	172.0	256.0	382.0	479.0	376.0	1201.0	29.02	30.0
Net Claims on the Private Sector	94.4	246.1	645.3	618.0	677.1	668.1	658.3	1.5	0.5
Net Foreign Assets	564.7	580.3	772.2	2439.0	987.6	347.6	402.4	17.8	-6.9
Money Supply	237.3	455.7	867.6	1565.0	1380	852.2	1145	17	-1.0
Currency ( <i>per cent</i> ) of Money Supply	46.6	39.4	39.9	56.9	27.5	29.90	32.80	NA	NA

Source: Calculations from CBL, statically series and monthly bulletin, various issues.

### 2.4.3 INITIATIVES FOR A LIBYAN STOCK MARKET

As hitherto mentioned, with the introduction of an “open door policy” during 1999, the Libyan economy considered how economic reform programmes may benefit businesses and how they may be managed. They reactivated private sector ownership and aimed to attract foreign investment including mobile domestic investment and allocation of resources. Additionally, the Libyan economy sought guidance from emerging countries, those which have undergone the experiment of financial markets. These issues are discussed subsequently whilst Appendix A (A.2) shows more details about the Libyan stock market.

#### 2.4.3.1 *Umbrella: Libya's Stock Market under the Economic Reform Programme*

As discussed earlier, in Chapter One, since 1999, economic reform measures have been adopted encompassing almost all economic areas: restructuring of banking rules and bureaucracy, fiscal and monetary reform, foreign investment law and dispute resolution. The objective of the reforms was to achieve the much-needed skills of citizens and enhance the

knowledge of workers to better meet the demands of the marketplace. Furthermore, the planned economic reforms include comprehensive economic liberalisation and mobilising savings by removing any constraints hindering stock market development. Libya's stock market was established with the crucial remit of rising capital under an economic reform programme among corporations and investment abroad that has made significant contribution to the Libyan economy's growth. With reference to the encouragement of savings and investment, the market's role is responsible for offering investors the opportunity to participate, in particular, in the significant development of the private sector in Libya and to share in the growth of its first companies' ownership, thus realising economic goals and objectives.

#### ***2.4.3.2 Establishment of an Organised Stock Market in Libya***

Similarly, there has been an increasing demand to establish an organised stock market in Libya. Historical and political circumstances indicate that the establishment of the first stock company occurred during independence in 1951. Later, in 1953, when the Libyan commercial code (LCC) was enacted, the trading of stocks was allowed. More specifically, the stock markets did not really have any significant impact until the early 1990s, when a substantial increase in the number of companies occurred, and most Libyan companies were unable to sell additional shares issued for financing further capital. In 1992/93, the state started to re-structure the major sectors in the economy; several industries were privatised and investment was encouraged. This created a great number of new shareholders. Libya, however, needed to develop an efficient stock market in order to handle the large volume of share trading likely to arise. New regulations concerning commercial activities, bank currencies, credit and privatisation of many of the public units and companies were passed (Decision no.9 in 1992, no.1 in 1993, and the decision of the GPCs issued in 1993) for the freedom of ownership of general economic units and establishments. Such steps stressed the need to establish a stock market in Libya.

1. GPC Resolution 198 for 2001 on the establishment of the General Agency of Ownership of Companies (GAOC) and Public Economic Units (PEU): this association undertook responsibility for transferring ownership of economic units from the public sector to the private. The tenth clause of this law dictated that commercial banks and other legally authorised agencies might act as mediators to handle the buying and selling of economic units of stock owned by the worker, without the right to own any of the traded stock. The

agency would arrange the setting of the necessary rules and regulations with the CBL to put in motion the sentences of this clause.

2. This law presented a distinct message to allow the trading of pre-owned economic units of stock and commence the establishment of a financial market. A clearer invitation to establish a stock market in Libya came with law no.21 in 2001, defining the practice of economic activities and execution of regulations. The tenth clause of this law dictated that the Board of the General Committee (BGC) would decide upon certain agencies to form a stock market according to the conditions and procedures defined by this law's regulations.

On 3 June 2006, GPC Resolution 134 regarding the revised establishment of a stock market in Libya determined its Memorandum Agreement. The fourth clause of the stock market law dictated market membership, including the following entities:

- Commercial and specialised banks
- Insurance companies
- Financial funds
- Subscribed companies, with capitals that are no less than the limit stated by the market's administration committee.

The Libyan stock market consists of nine departments:

1. Trading Department
2. Central Listing and Depository Department
3. Membership and Administrative Affairs Department
4. Financial and Administrative Affairs Department
5. Research Studies and Development Department
6. Control Oversight and Supervision Department
7. Legal Affairs Department
8. Public and Quality Relations Department
9. Communications and Information Systems Department.

The establishment of the Libyan stock market as a stock exchange was a major step in the contribution towards improving financial institutions within the economy, in order to enable it to realise a better utilisation of financial resources by mobilising domestic savings, encouraging foreign savings and channelling such resources towards productive projects through the development of a sound capital market.



### **2.4.3.3 The Stock Market Structure**

The current structure consists of two types of stock market: a primary and a secondary market. The former is one where shares are issued by corporations or other institutions to the public. In Libya, securities being offered to the public are governed by the Companies Act, 1976. This Act, administered by the Ministry of Commerce, is a crucial piece of stable legislation in the Libyan financial institution, which also defines the joint-stock company which issues negotiable shares of equal value to their members. The secondary market is a locus where shares already in circulation are traded once they have been issued in the primary market. GPC no.100 in 2004 and Resolution no.180 of 2004, as shown in Appendix A, Table 3.11, were issued and transferred to ownership companies for selling by the Libyan government as follows:

- Issuing the company's shares at market value in the stock market at an initial price determined by re-evaluation results besides the number of shares
- Adjusting the company's capital for net ownership rights according to re-evaluation results and issuing it in the stock market in the form of nominal shares
- Establishing new corporations to which the net asset value of the company is transferred after evaluation and issuing shares in the stock market for exchange at face value.

During 2006 the total trading volume in the stock market was only 355,840 LD related to the Sahara Bank, Suq Al-Gumaa Regional Bank, Hay Al-Andalus Regional Bank, Cement Regional Company and Muttahida Insurance Company. Other listed companies were not traded. The Sahara Bank, for instance, traded 18,898 shares on the stock market in 2006, with an average price ranging between 8 and 10 LD per share, which led to increasing the total value of shares traded to about 170,720 LD. In the meantime, shares of the Muttahida Insurance Company amounted to 1,822 with a total value of 182,200 LD with an average price of 10 LD in 2006. Likewise, Tripoli Regional Bank shares traded totalled about 277 with an average price of 10 LD and a total value of 2770 LD. Table 2.7 presents companies listed in the Libyan stock market, whose shares have been traded by buying and selling over time.

**Table 2.7 Companies Listed in the Libyan Stock Market**

Company	Data	Subscribed Capital (LD)	Shares
Assaray Bank	20/08/2005	3,000,000	300,000
Sahara Bank	13/12/2005	126,000,000	12,600,000
Suq Al-Gumaa Regional Bank	19/01/2006	3,000,000	300,000
Hay Al-Andalus Regional Bank	30/05/2006	3,000,000	300,000
Cement Regional Company	80/06/2006	600,000,000	6,000,000
Libyan Insurance Company	24/06/2007	50,000,000	10,000,000
Muttahida Insurance Company	29/06/2007	10,000,000	100,000

Source: Libyan Stock Market Report (2007).

The Libyan stock market, upon which this research focuses, can be considered an auction market, not a negotiated market, where the arena in Libya is concerned with trading stocks of companies listed on the stock exchange. All transactions take place through financial intermediaries called brokerage firms and brokers collect commissions for their efforts; no type of transaction can occur in the national stock market which involves dealers directly. Indeed, the banking sector plays a key role in the stock market in Libya in both the primary and secondary markets. In the former, most of the initial public offerings are conducted via the banking sector. They suggest appropriate details to the relevant companies and all phases of subscription are conducted by banks. This differs from the system in the US where commercial and not investment banks are responsible for such transactions. In fact, these banks, and not their investment counterparts, are responsible for such transactions and they offer the individual investors financial assistance to purchase securities. They participate in increasing activity by providing more liquidity to investors in the secondary market.

#### ***2.4.3.4 The Main Obstacles to a Sound and Efficient Stock Market in Libya***

As explained in early discussion, Libya, like many other countries, had long suffered from deficiencies within its economy, especially in areas such as inflation, balance of payment deficit, low rates of employment and growth, all of which created an imbalance in the economy. Problems of irregularity in supply and demand had a negative impact on prices and balance of payments. Similarly, fiscal policy tended to exceed the level of expenditure causing an imbalance between population density and growth and employment, resulting in structural distortion in the employment market. Likewise, severe decline in international oil prices during the 1980s and the effect of UN and US sanctions against the Libyan economy during the early 1990s have been explained in order to clarify the financial crises that Libya faced in the early 1980s and 1990s.

Cobham (1995) explains that stock markets in developing countries can suffer from problems. He identifies problems such as an imperfect flow of information and high transaction costs because the economies are too small to benefit from the economies of scale that characterise the major stock markets of the world. Cobham (1995) emphasises that in the developing countries there must be a strong preference for a bank-based rather than a market-based system. Furthermore, Fry (1997: 754) points out that, *“At best stock markets play a minor role; more often they resemble gambling casinos and may actually impede growth in developing countries”*. Despite the recognition of the importance of the stock market for Libyan economic development, and the limitations which the absence of a stock creates, it was noted by respondents to the questionnaire survey that many obstacles exist to the development of an efficient stock market in Libya (see, Appendix K: Subsections 3.4.4, 3.4.5 and Table K 4.4). Among the limitations and obstacles identified by the respondents are:

- Difficulty of prediction and domination of uncertain circumstances, owing to the issue of many rules and regulations without feasibility studies being conducted;
- The weakness of public awareness of the role of investment and the role of the stock market in the economy;
- The Libyan banking system is not sufficiently well developed;
- Libyan privatised companies were valued by unfair evaluation techniques due to the loss of basic trading information;
- Most Libyan companies are unable to sell additional shares issued for financing further capital investment;
- The short and long-term investments opportunities for Libyan companies are hindered;
- Lack of efficiency and development of financial information institutions and a financial press in this field.

## 2.5 SUMMARY AND CONCLUSION

The purpose of this chapter was to shed light on the characteristics and development of the Libyan economy since the revolution of 1969 in order to provide a framework within which the study's findings are to be interpreted and understood. Following the 1969 Revolution, the economy witnessed three major systems: the nationalism and socialism period, an open door policy period and, latterly, the economic reform programme. The economy experienced rapid expansion during the 1970s and early 1980s as real GDP grew by more than 10 *per cent* on average. This expansion was mainly financed by the oil revenue sector. In the mid-1980s economic growth slowed and the Libyan government started to experience reversionary trends. These later trends saw the collapse of oil prices and the Gulf war in 1990/1991.

Following the collapse of its economy, Libya was forced to re-examine its policies and redirect its development strategies. The country was struggling with economic and financial crises by the mid-1980s and international UN sanctions following US Libya-specific trade sanctions in the early 1990s. At this time, traditional remedies were becoming ineffective. The challenges of devising a strategic policy aimed at achieving the sustainable development of the Libyan economy are particularly linked to current official tendencies for restructuring the economy through increasing the role of the private sector and by continuing the process of privatising the public sector within the country.

Finally, it can be argued that, since implementing its economic reform programme, Libya's wealth has grown strongly amongst the country's small population due to oil price increases. Economic development has two significant factors: a high value/low employment energy sector and a low value/high employment non-energy sector. The latter contributes about 40 *per cent* of GDP employing 97 *per cent* of the formal workforce ranked at a very low level of productivity. Oil revenues accounted for about 90-95 *per cent* of exports and over 60 *per cent* of total GDP with employment of about 3 *per cent* of the population. The size of the informal economy is estimated at 30-40 *per cent* of GDP. Also, under an economic reform programme called "umbrella" and an open door policy, the stock market was established. This, subsequently, became successful and entered a new economic phase bearing the labels of economic openness and freedom. The following chapter will discuss the previous literature in the economic reform programme which related to the first and second research objectives.

## **CHAPTER THREE**

### **THE ECONOMIC REFORM PROGRAMME**

#### **3.1 INTRODUCTION**

Having discussed the main characteristics of the Libyan economy and the changes that have taken place within it since gaining independence, the thesis now moves in this chapter, to present an inclusive discussion of the literature that has been reviewed to help develop the economic reform model required for the development of a stock market and economic growth. In addition, the chapter indicates the reasons for adopting a programme of economic reform, pointing out the urgency for most developing economies to accelerate their growth rates and control the problem of poverty. Other aspects are also discussed and the main variables of economic reform and macro-economic performance, and strategies for assessing these when evaluating the performance of such programmes are considered. Furthermore, attention is drawn to the comparison between the experimenting countries from which Libya could learn.

Thirty years ago the world was divided into two main economic blocs: the first followed the direction of capitalism, which emphasises a market-based economy, freedom and deregulation and allows for privatisation and investment; the other developed centrally-planned, state-owned economies. Within the past 15 years the capitalist economy had proved to be the most effective method of managing any economy in the country of the world. Most of the old socialist and communist economies, such as the Soviet Union and Eastern Europe (e.g. Czech Republic, Hungary, Slovakia and Poland),<sup>10</sup> are now conducting partial or entire economic reform programmes that will last for decades. With the collapse of communist regimes in late 1989 in Eastern and Central Europe, symbolised by such events as the fall of the Berlin Wall and the execution of President Ceauşescu of Romania, and the disintegration of the Soviet Union in 1991 newly independent countries in Africa, the Middle East and Latin America realised the importance of such programmes, which were mainly supported by international organisations such as the IMF and World Bank (Williamson, 1994). When the first post-communist government in Poland came to power in August 1989 it adopted a radical strategy

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<sup>10</sup> The four countries (Czech Republic, Hungary, Slovakia and Poland) are referred to as the Visegrad countries after the town in Northern Hungary that held a meeting of the presidents of Czech Republic, Slovakia, Hungary and Poland on 15 February 1991. They signed a declaration of close co-operation during their post-communist transition economy and on the path towards EU membership (Fidrmuc et al., 2002: 2).

for rapid transformation from socialist-planned to market economy following the capitalist model of Western Europe. This strategy has also been adopted in modified forms throughout the rest of Eastern Europe and the former Soviet Union, including Russia post-1991 (Sachs, 1994). According to Williamson (1994), economic reforms have offered a global comment on the world economy, namely the social and political dimensions of transformation policy. The majority of developed and developing countries, regardless of geographic entities, income levels and ideologies, have joined mainstream economic development. As Wood (1990) remarked:

*“It is necessary to distinguish between nominal reform, meaning official policy initiatives, and real reform, meaning changes in how the economy actually works. Nominal reform can contribute to real reform (price decontrol being an example), but does not do so if it outstrips microeconomic learning capacity. In other words, the real pace of reform may be limited by how rapidly people and institutions can learn to play new economic roles.”*

This chapter is divided into seven main sections. Section 3.2 deals with the various definitions of economic reform. Section 3.3 draws attention to the importance, aims and objectives of economic reform programmes. Section 3.4 assesses economic reform programme variables and macro-economic reform variables are also described. Section 3.5 deals with the process of economic reform. In Section 3.6 many points of view from the literature are explained, drawing on the experiences of numerous countries worldwide which have already effected reforms to improve their economies. In Section 3.7 attention is drawn to the comparison between experiment countries. This is followed by a summary and conclusion in Section 3.8.

## **3.2 DEFINITIONS OF ECONOMIC REFORM**

At the end of the Second World War it was not by accident that, in referring to the process of post-communist transformation, the word “revolution”, formed by combination of the words “reform” and “evolution”, was utilised (Gil, 2003 and Ferrero, 2004). There are numerous terms which possess the same meaning as “economic reform programme” and many authors use the same phrases of “economic reform programme” (for example, Marks, 1995; Cronin, 2001; Krueger, 2005). However, expressions are also used such as “economy and transition” or “transitional economy” (e.g. Kolodoko, 1993; Nove, 1994; Lavigne, 1995; Jurajda and Terrell, 2000; Karsten, 2005). Even so, other authors prefer the expression “transformation” which has the same meaning as economic reform programme and transition (Blommest and Marrese, 1991; Francis and Kompas, 2001; Akin and Demircioglu, 2005; Daniel and Yang, 2006). Similarly, some authors define this process as “economic adjustment, stabilisation, and

regime” (Balcerowicz and Gelb, 1994; Sarma and Gupta, 2002). Nevertheless, most economists are accustomed to using the first two expressions “economic reform programme” and “transition” (e.g. Gordon, 1991; Hughes and Lovei, 1999). Accordingly, it was determined via the literature review that most articles and books concerning developing nations, such as China and Eastern European regions, adopt the expression “transition economies”, which determines the programme of reform as the transition from a capitalist to socialist model or to a capitalist market economy (Jeffries, 1993; Bishop et al., 2004; Bouev, 2004 and Stein, 2005) and to the transition from capitalism to post-industrial, post-economic society (Buzgalin, 1994 and Brown, 1995), the transition from Stalinism to the socialist market economy (Nolan, 1980) and the transition to the drastic growth of production functions in the US (Felstein, 1980). Similarly, for Middle Eastern countries, such as Egypt, Israel and Jordan, the expression of “economic reform programme” is generally applied. On the other hand, in China and Eastern European countries the “process of transition” has involved, besides economic changes, shifts in the political system. Here, political factors led to economic change in these nations. One further example is the general approach to the “process of transition” based on the “institutional analysis of the evolution of transition to development” applied to disparate countries (Intriligator et al., 1999). Since this research concentrates on the Libyan economic situation, the expressions “economic reform programme” and “transition” will be adopted referring to various kinds of changes involving economic, political and social factors.

In addition, there are many definitions of the economic reform programme and transition. According to the Oxford American English Dictionary and Thesaurus, 2006, the meaning of reform is to “make changes” in something (typically a social, political, or economic institution or practice) in order to improve it, such as an opportunity to reform and restructure an antiquated schooling model. The Organisation for Economic Co-operation and Development (OECD, 1996) defined the economic reform programme as “an attempt to eliminate a number of market rigidities”. The Oxford English Dictionary (2006) defines transition thus: “the process or a period of changing from one state or condition to another”. Finally, Fanelli (2007) defined market reform as the implementation of changes in the rules of the economic game by a legal authority to widen the role of markets and private sector ownership, to deliver a more open-door policy to the entire economy.

### **3.3 THE IMPORTANCE, AIMS AND OBJECTIVES OF ECONOMIC REFORM PROGRAMMES**

The measures of economic reform have been developed by the Freedom House Country Rating, the Heritage Foundation and the Fraser Institute. Each of these organisations independently reaches the same conclusion, as do several academic studies using different proxies for institutional conditions or the policy regime (De Haan and Sturm, 2000). In the late 1980s social revolutions in Central and Eastern Europe (CEE) initiated a new political and economic situation and a cultural process of restructuring without precedent in history. It became evident that nations which had based their development on centrally planned directives and inward-looking programmes were not only failing to provide their citizens with rising living standards but, in some cases, were actually retrogressing (Schipke and Taylor, 1994). In many developing countries this was the decade of debt crisis and high inflation. Rich nations and those with natural resources such as Libya, as one example of a developing country, found themselves, in effect, unable to earn sufficient foreign exchange to satisfy their people's needs in particular, and the economic system in general.

Bgcolor (1996) reported that the majority of developing nations were attempting to transform their societies by adopting a new model of market-oriented mechanisms, which attempted to compensate for the lost period of transition. This occurred especially among the countries of East and South Asia, Central and Eastern Europe and the former Soviet Union, and the Latin American nations, which undertook broad economic reform programmes. In the same way, these countries transformed their economies and societies from ones dominated by the public sector to ones where they could burgeon in response to market signals. Discussing the East European economies, Bird (1992) found various economic problems, such as shortages and general weaknesses in the supply side of economic growth, soft budget limitations (at the level of both individual enterprises and the economy as a whole), repressed inflation (which resulted in other manifestations of excess aggregate demand), hidden unemployment (which was reflected in low labour productivity) and a substantial level of unproductivity. These variables led such countries to adopt programmes of economic reform in order to treat said deficiencies in their economic activities.

From another perspective Gomulka (1994) observed that, to achieve its objectives, any economic reform programme package usually consists of the following measures: consideration of government budget; price liberalisation and launching privatisation; control



monetary policy; convertibility of domestic currency; foreign trade liberalisation; establishing a market environment laws that support privatisation; dismantling of former state monopolies. While studying the economic reform programme in the case of the transition economy of Czech Republic, Colijn (1991), Grosfied and Hare (1991) indicated certain achievable steps in an economic reform programme:

- Introduction of deregulation so that the private sector can play its role;
- Introduction of laws to achieve a budget surplus via a decrease or, at least, a restraint on government expenditure; and
- Introduction of laws so that the exchange rate of the currency can be controlled; this can be accompanied by an increase in level of exports and a decrease in level of imports.

### **3.4 ASSESSING THE ECONOMIC REFORM PROGRAMME VARIABLES AND MACRO-ECONOMIC REFORM VARIABLES**

What is always fundamental in any economic reform programme is its success in improving the performance of economy activity. In order to evaluate the performance of an economic reform programme it is crucial to establish basic variables that can reveal performance. According to many authors, such as Charemza (1991), Hare and Hughes (1991), Hrneir and Klacek (1991) and Landesmann (1991), economic reform variables can be measured mostly via the following factors:

- Privatisation, together with new measures in fiscal and monetary policy and income policy;
- Price liberalisation;
- Exchange and trade liberalisation.

Lavigne (1999), though, stated that more specific variables should be taken into consideration in measuring macro-economic performance. These include: inflation rate; interest rate; government budget; current exchange rate; rate of growth. Williamson (2004) considered ten reforms of the “*Washington Consensus*” concerned with economic institutions’ policy: fiscal discipline, public expenditure priorities, tax reform, financial liberalising, exchange rates, trade liberalisation, foreign direct investment, privatisation of state owned enterprises, deregulation and property rights. Clearly, these 10 points should be relevant to the economic policy situation of the transition countries, which included other points reported by the World Bank and IMF (IMF, 1996) as caution against corruption in the public sector and money

laundering in the financial sector, which will take fiscal and monetary policy very seriously. Nuti (1999), however, indicated that the Washington Consensus permitted the following explanation of the transformation of former socialist economy: transition = liberalisation + privatisation (State Owned Enterprises) + open international trade in order to have an efficient market economy.

### **3.5 THE PROCESS OF ECONOMIC REFORM**

Guitian (1982) presented a set of standards which can be used to measure or evaluate the performance of an economic reform programme. These standards or principles can be classified into three categories, namely (1) positive or practical standards, (2) normative standards and (3) conjectural or judgmental standards. The first category measures the performance of the countries' economies under an economic reform programme by comparing their results to the situation that prevailed prior to introduction of this programme. Normative standards measure the performance of the countries' economies under an economic reform programme by comparing the actual results achieved by the economic reform programme period with the targets which were already specified when the economic reform programme was introduced. Conjectural or judgmental standards focus upon what has been done and what should be done. In fact, the third standard aims to compare the actual performance of adopting an economic reform programme with the absence of the economic reform.

In reality, these standards provide the opportunity to understand and to plan so that those implementing economic reforms can improve the results of any programme. Obviously, the second standards are quite easy to understand as they measure output against objectives. Khan and Langmead (1990) considered the third group of standards to be the most controversial from many angles. This may be because the objective of most assessment is to compare what has happened with what would have happened in the absence of economic reform. Besides this, the first standard can be considered as the least contentious because it simply compares sets of realistic information concerning the economic reform programme. The Libyan economy in the early stage of reform, after the resolution of the Lockerbie question and the UN Security Council, permanently lifted its 11-year-old sanctions by 12 September 2003, and tried to re-establish the relationship with the US. This clearly suggests that positive standards should be applied by this research. The crucial point of consideration is why we apply standards in economic evaluations. The reasons are to improve the economy from both sides. It is understood that, to study the economic reform programme, there are many common

parameters through which objectives of the Libyan economy were achieved, the first standard (positive standard), compared with the other two standards, can give a more straightforward assessment, especially since this research aims to state the actual performance in the economic situation under the economic reform compared with its situation prior to adopting this programme (for more explanation see Chapters Seven and Eight).

### **3.6 THE ECONOMIC REFORM PROGRAMME EXPERIMENTS EXPERIMENT**

Since the late 1970s transition from socialist planned to market economies began in Asia and in the late 1980s, in Europe, its success or failure had the most significant impact upon the population of these economies and the world at large as a general event in the 20<sup>th</sup> century (after the Great Depression and until at least the beginning of the 1980s) (Levigne, 1999). The process and outcome of the transition economy will assist the scope of the 21<sup>st</sup> century global system. Transformation of centrally-planned economies is the introduction of new financial policy, new ownership structures, new political systems (Knell and Rider, 1992). In their economies, starting from the post-communist countries with emerging markets in the CEECs and the former Soviet Union, China, India, Latin America, MENA nations within the space of a few years, and in which Libya is located, tend to be in a similar situation politically and economically.

#### **3.6.1 Central and East European Countries Experiment**

In the early 1990s the economic performance of the reform process in South East Asia and Latin America suggests that the post-communist countries may have difficulty in joining liberal democratic rule and fundamental economic restructuring (Staehr 2006). Lipton and Sachs (1990: 75-99) argued that: “[...] *Eastern Europe should work hard to create the common core of market institutions found in all of western Europe: private ownership protected by a commercial law, a corporate structure for industry, an independent financial system, and so forth [...] structural reforms cannot work without a working price system; a working price system cannot be put into place without ending excess demand and creating a convertible currency [...] the macroeconomic shock must be accompanied by other measures, including selling off state assets, for bankruptcy, preparing a social safety net, and undertaking tax reform. Clearly, the reform process must be comprehensive.*”

Recently, Tridico (2006) reported that both Hungary and Slovenia implemented the gradual approach programme of macro-economic stabilisation, whilst Poland and the Czech Republic, under the shock therapy programme, achieved similar results. Other countries, though, such as Russia and Bulgaria, which also adopted a shock therapy programme, had very negative performances in their economic reform. Lipton and Sachs (1990) provided five steps related to the transition of market economy requiring implementation:

1. Macro-economic stabilisation,
2. Liberalisation of foreign trade and ensuring convertibility of national currency,
3. Companies' reform through privatisation,
4. Establishing a social security system,
5. Developing institutional and legal infrastructure of market economy and market-based financial system.

There are, according to King (2003), three reforms to be considered, price liberalisation, stabilisation and privatisation, as preconditions for a successful transition to a market economy. These reforms should all be completed at the same time or in the short-term and, provided that the negative shocks to the domestic economy, would succeed rapid liberalisation of price and foreign trade as the shock associated with the austerity of a “*stabilisation*” policy programme (fiscal and monetary austerity). King referred to rapid privatisation of large entry prices by a mass privatisation technique policy as “*shock privatisation*” which creates severe direct and indirect supply and demand. Few enterprises, for instance, Russia in 1994, had a mass privatisation programme, where investment was only 30 *per cent* of its 1990 level. Table 3.1 suggests that the depth of recession in transition countries is based on classification with respect to liberalisation strategy. Whilst the Czech Republic undertook rapid reforms and suffered from transitional depression, the national decline in GDP was 8 *per cent*, 17 *per cent* for Poland and 13 *per cent* for Slovakia. Other countries which followed such an approach experienced decline in growth rates following reforms in the generally positive outcome for those countries adopting the gradual approach. Considering growth performance was relatively large, with growth rates from 1.9 *per cent* in Hungary to 6.5 *per cent* in Estonia, and 4.1 *per cent* for Slovenia, growth performance following recession stood at 2.4 *per cent* and 3.9 *per cent* in Bulgaria (see Table 3.1).

**Table 3.1 Growth Rates in CEECs Following Reforms**

Countries	Liberalisation		Three-year Average Growth Rates of GDP			
	Reform Strategy	Years of Recession	Prior to Reforms 1986-1988	Following Start of Reforms 1990-1992	Recovery Stage Turning point	Growth
Bulgaria	Fast	1989-1993	4.3	-9.4	1994 1998	2.4 3.9
Czech Rep.	Fast	1990-1992	1.6	-4.4	1994	4.1
Estonia	Fast	1991-1995	N/A	-12.0	1996	6.5
Hungary	Gradual	1990-1993	1.8	-6.2	1994	1.9
Latvia	Fast	1992-1994/1996	N/A	-16.1	1997	5.6
Lithuania	Gradual	1990-1995	N/A	-10.1	1996	5.0
Poland	Fast	1990-1991	3.4	-5.3	1992	3.9
Romania	Fast	1989-1992	0.9	-9.1	1993 2000	4.2 4.3
Slovakia	Fast	1990-1993	2.8	-7.9	1994	6.0
Slovenia	Gradual	1989-1993	N/A	-5.1	1994	4.1

Source: Foster and Stehrer (2005).

Poland and Hungary undertook a gradual approach to reform their GDP level in 1996 and 2000, respectively, but Hungary (2000) and Slovenia (1998) took longer to return to pre-reform GDP levels than Poland (1996) and the Czech Republic (1997). Both countries followed the fast approach. Slovenia also followed faster reforms because it recovered more quickly than Slovakia (1999). Fisher et al. (1996a, 1996b, and 1998) concluded that the transition experience for both macroeconomic stabilisation and structural reforms contribute growth and that the more structural reform occurred the more rapidly an economy expanded.

### 3.6.2 China Experiment

From the early 1950s to the early 1970s the centrally planned economic system was based on the Soviet model as endogenous to development strategy and external environment. It has the following features described by Chai and Roy, 2006: collective farms in the agricultural sectors; state-owned enterprises; central planning; control economy by government. In early 1978 China's economy was a closed system with very limited trade and no financial interaction with the rest of the world (Zhao, 2006). At the end of 1978 and early in 1979 China adopted reform and an open door policy with an alternative gradual, evolutionary approach to the transition reform to the rest of the world. The success of China in its approach to the process of transition produced many challenges from a closed to an open economy to conventional knowledge in economic theory (Chow, 1997; Qian and Wu, 2000). Grose and Steinherr (1995) argue that the Chinese economy has been successful in a gradualism situation in introducing economic reforms compared with Eastern Europe. They summarised the points. Firstly, China had no political "big bang"; it was under control, whereas Eastern Europe has experienced a political "big bang" and people expect freedom of choice of

employment or consumption incompatible with gradual reform. Secondly, the key sector of China is highly labour-intensive and the small size of the basic unit permits quick liberalisation that has employed more than half the population. This means that China has experienced a greater “big bang” effect than Eastern European farming, which has been much less important for the whole economy and much more capital-intensive. Thirdly, China decentralised decision-making to provincial and communal authorities which embarked on developing local industry on a competitive basis. The increasing share of non-state enterprise is not the result of privatisation of existing state-owned enterprises (SOEs), but more the result of rapid growth of non-state enterprises. Finally, China has had successful gradualism of “open economy zones”. China’s introduction of economic reform has grown faster than during the pre-reform period, as Table 3.2 demonstrates. China’s real average GDP has been estimated as growing by 9.6 *per cent* during 1979-2007.

**Table 3.2 China’s Average Real Annual GDP Growth Rates, 1960-2007**

Time period	Average Annual Growth ( <i>per cent</i> )	Time period	Average Annual Growth ( <i>per cent</i> )
1960-1978 (pre-reform)*	5.3	1998	7.8
1979-2007 (post-reform)**	9.6	1999	7.6
1990	3.8	2000	8.4
1991	9.3	2001	8.3
1992	14.2	2002	9.1
1993	14.0	2003	10.0
1994	13.1	2004	10.1
1995	10.9	2005	9.8
1996	10.0	2006	9.5
1997	9.3	2007	9.0

Source: \*Data from 1960 to 1978, Das (2006); \*\*Data from 1979 to 2007, IMF (2007) World Bank Outlook Database.

### 3.6.3 India Experiment

India, after over sixty years of independence and economic planning, is the second largest country in terms of population, the seventh largest in terms of geographical area and is one of the world’s poorest countries with per-capita income of 350 US\$ in 1998 (World Bank, 2000). Since 1991 India has adopted a public sector under centralised investment planning with flexible controls on private investment, which compelled the restructuring of manufacturing firms. Since the 1990s India’s economy has been one of the fastest growing worldwide (see Table 3.3).

**Table 3.3 Indian Rates of Economic Growth, 1950-2000**

(In per cent)

Variables	1950-1980	1980-1990	1990-2000
Annual Real GDP Growth	3.7	5.9	6.2
Annual Real GDP Growth Per-capita growth	1.5	3.8	4.4

Source: Delong (2001).

Delong (2001: 5-6) wrote, in relation to Indian economic growth: *“What are the sources of India’s recent acceleration in economic growth? Conventional wisdom traces them to policy reform at the start of the 1990s. Yet the aggregate growth data tells us that the acceleration of economic growth began earlier, in the early or mid-1980s, long before the exchange crisis of 1991 and the shift of the government of Narasimha Rao and Manmohan Singh toward neoliberal economic reforms. Thus apparently the policy changes in the mid-and late-1980s under the last governments of the Nehru dynasty were sufficient to start the acceleration of growth, small as those policy reforms appear in retrospect.”* Srinivasan (2003), Chai and Roy (2006), and Girdner and Siddiqui (2008) argued that the structure of the economic reform programme was aimed at addressing one of the root causes of India’s economic growth problems, i.e. government over regulation.

### 3.6.4 Latin American Experiment

Following Williamson (2004), as mentioned in section 3.4, economic reform in most of Latin America occurred within the past two decades. Reforms in the first generation included labour markets that are more flexible, free trade liberalisation and deepening privatisation. Similarly, the second-generation included regulatory, judicial social security, education, tax and political reforms which established the institutional conclusion that these could be sustained in their economic growth. Holden and Rajapatirana (1995) presented economic reform in Latin America via two types of generation: a first generation of economic variables and a second generation of reforms at macro-economic level, which are required to ensure that first generation changes are sustainable.

#### *First Generation Reforms and Outcomes*

Since the early 1970s Latin America began its economic reform with the initial case of Chile and was implemented from the mid-1980s for the majority of Latin American countries. Chile, for instance, has the longest period of reform having been able to complete its first and second-generation reform agenda (Inter-American Development Bank, 1996). Table 3.4 summarises economic reform in Latin American states. Mexico, for instance, has had foreign

debt crises and huge balance-of-payment deficits. Inflation has been brought under control by Argentina, Bolivia, Brazil and Peru where the foreign crisis caused hyperinflation and current account deficits became unsustainable (see Table 3.4).

**Table 3.4 The Economic Reform in Latin America**

Country	Starting Economic Reform	Recovery <sup>a</sup>	Macro-economic Situation	International Context
Argentina	1978 (beginning) 1981-1989 (suspension) 1991 (resumption)	1991-1993	Economic instability High inflation Stabilisation programme (previous hyperinflation : 4,924 <i>per cent</i> in 1989)	Financial liquidity Financial liquidity Slight improvement in terms of trade
Bolivia	1985	1988-1990	Stabilisation programme (previous hyperinflation : 11,750 <i>per cent</i> in 1985)	Financial liquidity Sharp decline in terms of trade
Brazil	1990 (beginning) 1994 (new phase)	1994-1995	Successive failure of stabilisation programmes Real Plan: price stabilisation (1994)	Financial liquidity Decline in terms of trade
Chile	1974 (beginning) 1982-1985 (crisis in model) 1986 (new reform phase)	1976-1980	Stabilisation programme (previous hyperinflation: 559 <i>per cent</i> in 1973) Adjustment and stabilisation programme Stability	Financial liquidity Decline in terms of trade Financial liquidity Improved terms of trade
Colombia	1990	1994-1995	Stability Reform preceded by sharp devaluations	Financial liquidity Decline in terms of trade
Mexico	1986	1991-1993	High inflation Stabilisation program	Financial liquidity Sharp decline in terms of trade
Peru	1990	1992-1994	Stabilisation programme (previous hyperinflation: 7,482 <i>per cent</i> in 1990)	Financial liquidity Decline in terms of trade

Notice a: Inter-American Development Bank (1996).

Source: Moguillansky and Bielschowsky (2001).

### ***Second Generation and Reform Strategy***

The key aim of the second-generation agenda is to define and re-evaluate the structural role of the state in economic policy relating to legal systems, property rights and financial institutions, (Holden and Rajapatir, 1997). Holden and Rajapatir (1997) re-defined the role of the state in second-generation agenda as follows:

- Ensure that regulation leads to competitive solutions;
- Let public goods undertake activities freely; and
- From those activities, there is no comparative advantage.

According to the Inter-American Development Bank, perception of economic reform in Latin American countries is too pessimistic. Deregulation, free trade and consistent attack on inflation have contributed long-term to increase economic growth and investment. Camdessus (1997) concluded that Latin American economies have witnessed significant increases in growth rates. Average growth in Latin America increased from less than 1.5 *per cent* in 1988-1989 to 5 *per cent* in 1994. Additionally, the rate of inflation declined from 567.6 *per cent* in 1990 to 5.8 *per cent* in 2006 (see IMF, 2007); private capital inflows rose from close to zero in 1989 to 70 billion US\$ over the same period.

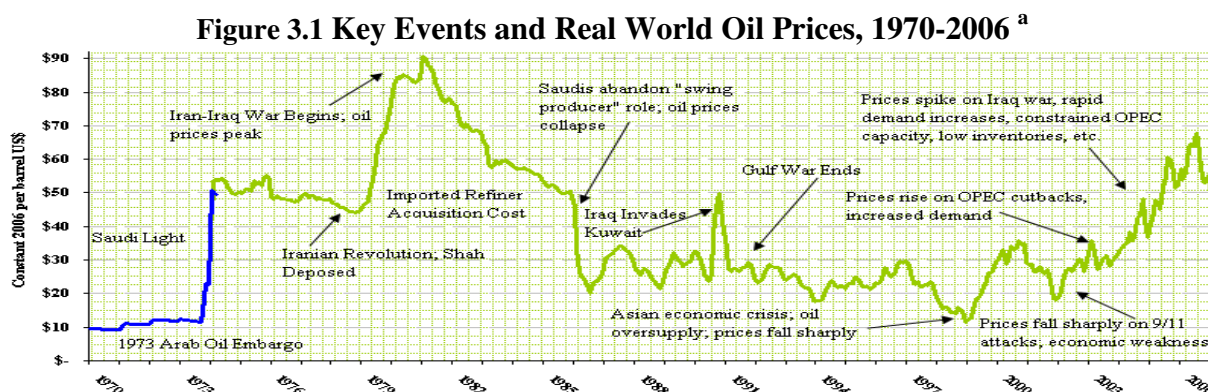


### 3.6.5 Middle Eastern and North African Countries Experiment

From the early 1970s up to the late 1980s the Arab state system had a high degree of dependency on external capital inflows which comprised a significant portion of central government revenues. This inflow consisted of international economic and political rents (Pawelka and Boeckh, 2004). In the early 1980s world oil prices decreased and failed to recover until the end of the 1990s, except for a short period during the second Gulf War. Inflows increased to more than 20 *per cent*, for instance in Algeria, Egypt, and Jordan, whilst, in the United Arab Emirates (UAE), inflation was under control, running at 3 *per cent* in 1991 (Pawelka and Boeckh, 2004). The majority of Arab countries had implemented liberal reform in economic conditions as suggested by the International Financial Organisation. The Middle East developed its own region of Gulf States, i.e. Bahrain, Oman, Qatar, Saudi Arabia, Kuwait and the UAE. These countries made higher levels of economic progress due to oil revenues, but economic and political reform was required for horizontal integration to occur (Pawelka and Boeckh, 2004). Philippe (2007) indicates: *“As is the case with Central and Eastern European countries, these actions would greatly benefit the Mediterranean countries. While the European framework is neither perfect nor fully flexible, legal issues that affect intellectual property, the right to compete, and other rules are indispensable complements to liberalisation that would both increase communication between economies and long-term security. This would encourage investment and thus growth and employment.”*

Figure 3.1 displays the most significant events and real world oil prices situation during the 1970-2006 period. According to the IMF, during mid-2006 Libya's macro-economic indicators remained strong which might indicate the impact of the main steps of economic reform due to the high international price for Libya's crude oil exports. From among this oil price increases per barrel, the average amount was 38 US\$ for 2004, 50.64 US\$ for 2005, 63.05 US\$ for 2006 (CBL, 2005 and OPEC September, 2006). Subsequently, it increased to 93.33 US\$ for 2007 and 126.74 US\$ during early 2008 (EIA, 2008). On 27 March 2008 oil prices reduced to 141.71 US\$ per barrel amid Libya's threat to cut output and the prediction by OPEC's president that prices could reach 170 US\$ by the summer (Schmollinger, 2008). Libyan economic growth rates during the early and late 1990s were either negative or considerably lower. The negative and lower growth rates during that period, however, reflect an era of political instability and poor adjustment to the reversal of boom conditions of higher oil prices. Regarding data from the IMF (2003, 2008), in 2003 there was rapid GDP growth during the post-sanction period at 9.1 *per cent* and non-oil sector growth by 2.2 *per cent* due to

increasing oil prices. The fiscal stance continued to be expansionary, with a non-oil fiscal deficit widening to 36 *per cent* of GDP.



Notice a: Prices measured by CPI for all urban consumers, 2006.

Source: EIA (2008).

In 2004 real GDP grew by 4.5 *per cent*, while, in 2005, macro-economic reform remained relatively strong. There was real GDP growth of 35 *per cent*, inflation remained low (2.5 *per cent*) and agriculture had remained modest at 2.5 *per cent*, whilst the manufacturing sector grew positively by 1.8 *per cent* for the first time for 5 years. In external terms, the current account surplus widened to 41 *per cent* of GDP with increased hydrocarbon exports worth about 29 billion US\$, at the end 48 *per cent*. Imports grew about 11 billion US\$ of a 24 *per cent*, boosted by increased demand. Furthermore, gross international reserves rose to about 32 months of projected 2006 imports (IMF, 2006). Appendix A, Table 3.14 illustrates crude oil production in MENA nations including Libya during the 1980-2005 period. The recent economic reform programme in Libya, which involved the financial sector in several ways, has been essential for growth of the private sector and the elimination of illegal black market transactions previously practiced before 2002. Thus, deregulation directed national and foreign investment of production in Libya, to broaden its capacity and expand the role of the private sector, especially with the issuance of law 134 of 2006 to establish the stock market following the privatisation process and the increase in national economic growth rates (see Chapter Two).

### 3.7 COMPARISON BETWEEN EXPERIMENT COUNTRIES

Many nations have adopted economic reform, such as Africa, Middle East, Central and Eastern Europe, South and East Asia and Latin America. For instance, Central and Eastern European countries, as mentioned earlier in this chapter, adopted this programme reflecting

economic change and political policy. Moreover, most Asian countries achieved favourable results when compared with other countries, which may have already had the benefit of human resources in their economy. For instance, Korea had a literacy rate of 30 *per cent* in the mid-1950s, which had increased to over 95 *per cent* by the early 1990s (Camedssus, 1997a). The Appendix A, Tables and Figures summarise real GDP rate, inflation rate, central government fiscal balance and the difference between savings and investment in various countries internationally during the 1985-2006 period. As these tables and figures illustrate, every country has achieved distinct progress in their economy after adopting the economic reform process, but there are varying degrees of economic performance from one country to another. It is evident that South and East Asia achieved a significant economic performance when compared with other countries, as Table A 3.15 and Figure A 3.1 show. In fact, there was a strong rate of growth over this period and a lower rate of inflation, as presented in Table A 3.16 and Figure A 3.2. Furthermore, there was a small deficit in its central government fiscal balance (see Table A 3.17 and Figure A 3.3) and it had a higher score of variance between savings and investment compared to other countries, as Table A 3.18 and Figure A 3.4 demonstrate. Sub-Saharan countries additionally achieved sound performance when faced with major problems in their economies because the ratio of external debt to GDP growth rate grew from 111.7 in 1994 to 101.1 in 1996 (World Bank Outlook, 1995). Nonetheless, Central and Eastern European countries can be considered as the worst performing in the world as they achieved very poor economic indicator performance during the 1985-2006 period when compared with other nations. Indeed, the most crucial points in the various countries internationally can be due to variance between savings and investment. For instance, the highest percentage for difference between savings and investment as a percentage of GDP in South and East Asia was 35.6 *per cent* in 2006 compared to 22 *per cent* for Africa, 19.7 *per cent* for Sub-Saharan Africa, 21.9 *per cent* for Middle East, 24.5 *per cent* for Central Eastern Euro and 21 *per cent* for Latin American states (see Table A 3.18 and Figure A 3.4). At the same time, exports from these countries increased gradually throughout the last decade (see World Economic Outlook, 2007).

As observed, research in respect of the transitional economies has been mainly conducted in Eastern Europe and Asia, where economic reform programmes began earlier than in Libya. The first practical action of the Libyan state towards economic reform started in 1999 as the sanctions pushed the economy towards collapse. The reforms continued with deregulation, privatisation and liberalisation with another landmark being the establishment of the stock

market during 2006. Consequently, given Libya's late development in this area, the country's policy-makers should have been able to examine similar experiments in other developing countries, with a view to, for instance, assessing their strengths and weaknesses. Specifically, the economic reform programmes in the MENA nations such as Algeria, Egypt, Bahrain, Jordan, Oman, Qatar, Saudi Arabia, Kuwait and the UAE are of note, since many lessons can be learnt from the experiments of these other developing countries, taking into consideration certain similarities in the environment and characteristics of their various economics. Tardos (1988: 69) emphasised that lessons can be learned from the experiences of Hungary and Yugoslavia *"as well as from monetarist and neo- and post- Keynesian economists and practical experts, who have studied experiences of collected experts, who have studied experiences collected in market economies over the past decades."*

On 1 January 1987 Hungary, introduced banking reform which established commercial banking operations. However, within a year of this reformation, Hungary began to experience the same frustration with monetary policy regulations that plagued Yugoslav countries for endogenously growing money supply and the inability of central monetary authorities to control spending and inflation (Gedeon, 1986). Despite these observations, there are some differences when compared with the Libyan experience.

- Libya has experienced huge reform, moving from a centrally-controlled to a market-based system.
- Libya has the distinctive characteristic of having been reliant on the oil industry for its economy. Oil is the major source of income and almost all foreign currency. Oil revenues comprise over 95 *per cent* of Libya's hard currency earnings (75 *per cent* of government receipts and 30 *per cent* of the gross domestic product).
- Libya investment capital is available in abundance.
- Libya's economic reform movement has not been inspired by the desire to join the European Union, as is the case with Eastern European countries that have had to formulate and implement initial economic reforms as a pre-condition of joining.

### 3.8 SUMMARY AND CONCLUSION

This chapter has provided an economic review of the literature of economic reform programmes on macro-economic performance. Key points of this chapter are summarised as follows. There are diverse expressions of economic reform programme such as transition,

transformation, economic adjustment, stabilisation and regime. In this research, the expressions “economic reform programme” and “transition” will be used.

1. Economic reform programmes and macro-economic reform generally seek combativeness of the economy system, satisfaction of demands, solvency of the state and welfare of citizens. They may differ in the particular mix of these goals and in the instruments they use. Inflation, budgetary and current-account deficits, unemployment and loss of competitiveness are serious challenges for new democratic government policy.
2. The variables of reform are assessed in terms of the economic reform programme and macro-economic reform performance, such as deregulation, corporatisation, privatisation and liberalisation, budget deficit, the exchange rate, rate of GDP growth, per-capita income, real interest rates and inflation rate.
3. In the last twenty-five years Latin America has undergone a period of restructuring market reforms. Chile is the only case where a Latin American reform programme can certainly be classified as a reform success. The other states reveal that reforms have only partially realised the desired target (Brazil, Mexico, Peru and Uruguay) or resulted in absolute failure (Argentina, Paraguay and Venezuela).
4. Kostadinova (2004) believes that geography plays an indirect role in terms of levels of economic reform by affecting the outcomes of elections. For instance, countries physically closer to Western Europe were more receptive to it in terms of political and economic structures than countries more distant. Libya, in the centre of North Africa, is very close to the European countries which may be useful in respect of obtaining positive experience from these nations, both politically and economically.
5. The economic transition experience in other countries has provided reform policy close to the Libyan situation. For instance, the nature and objectives of the former Soviet economies and their economic situations are quite dissimilar to those of the Libyan economy. Libya, however, may learn from their errors.

This chapter has argued that the economic reform programme plays an important role in stock market performance. It has explored the nature of the reforms and challenges associated with those economies that have embarked upon such reform. The next chapter will provide a review of theoretical and empirical perspectives on the effect of both stock market development and economic reform on economic growth.

## CHAPTER FOUR

### ECONOMIC GROWTH THEORY

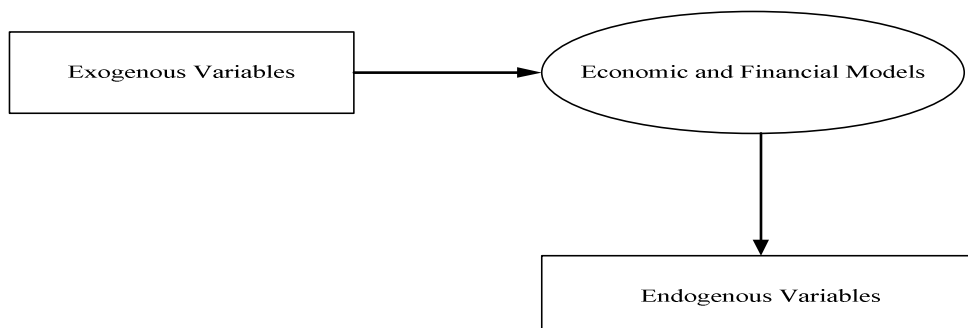
#### 4.1 INTRODUCTION

The preceding chapter reviewed the literature concerning economic reform, within the framework of moving from a closed or socialist economy to an open or capitalist economy. Now, in this chapter, a simple framework is developed having considered the theoretical and empirical literature on economic growth and financial development, with reference to the endogenous growth theory. The chapter begins by considering how the traditional growth theories failed to recognise the importance of financial factors in the growth process, and it proceeds to demonstrate how the emergence of the endogenous growth literature changed the profession's views on factors affecting growth by allowing technical change to be modelled endogenously. Within this recent approach, previous theoretical and empirical studies have attempted to identify the relationship between the development of financial markets and economic growth.

Growth and development theorists at both the micro and macro-economic level are concerned with the level of national output and its growth over time. They study problems of economic stagnation, unemployment, inflation, interest rates, economic growth, wages, the exchange rate, the stock market and cyclical instability, also the fiscal and monetary policies adopted by governments to deal with these problems. Economic conditions abroad, the price of oil and the balance of payments within other countries are also examined. They may also be concerned with the economic welfare of both poor and wealthy households affected by fluctuations in interest rates or inflation, which are called endogenous variables. The other endogenous variables are the objects of analysis in the economic and financial model, as Figure 4.1 shows. The relationships between endogenous and exogenous variables are linked, as exogenous variables are not strictly independent of the endogenous variables (Burda and Wyplosz, 2001). Within the emergence of the endogenous growth literature model, the focus would be shifted from relying on the unknown exogenous technological progress to explaining economic growth by different theoretical and empirical models where the engine of growth also includes human capital or knowledge that is accumulated during a period of time. However, periods of

high unemployment and stagnation occur from time to time throughout the world (such as in the 1930s in the US and the early 1980s and early 1990s in South East Asia).

**Figure 4.1 Relationships between Endogenous and Exogenous Variables**



Source: Developed for this research from Section 4.1: Introduction.

During the 1990s Libya experienced the same economic problems of stagnation and unemployment. For these reasons, theorists of the late 1950s and early 1960s interpreted the process of development as a series of successive types of economic growth, in which the right quantity and mixture of savings, investment and foreign aid were all that was essential to enable the development of nations that had historically been followed more by developed countries (Bourne, 2006). Through the 1980s and early 1990s there was a counterrevolution in economics concentrating on issues such as the beneficial role of free markets, open-door economies and the privatisation of inefficient public enterprises (Todaro and Smith, 2006).

This chapter is divided into four main sections. Section 4.2, discusses neoclassical growth theory and the use of production functions. This is followed by an explanation of the new growth theory, or endogenous growth theory in Section 4.3. In Section 4.4 the way in which the effects of the stock market on economic growth can be identified is discussed. In Section 4.5 a summary and the conclusion of this chapter is provided.

## 4.2 NEOCLASSICAL GROWTH THEORY

The history of the economic theory growth of output and the distribution of income between wages and profits were presented by Adam Smith in 1776 in the “*Wealth of Nations*”. This most important contribution was to introduce the notion of increasing returns, based on the division of labour. His major contribution was to understand the fundamental forces which underlie the development of economic policy (Farmer, 1997). Modern growth theory started

with a classic article by British economists Harrod and Domar, “*An Essay in Dynamic theory*”, now called the *Harrod-Domar Growth Model*. This model describes the economic mechanisms whereby more investment leads to more growth. Both Harrod (1939 and 1948) and Domar (1946) used the production function to support their claim that the capitalist system was inherently unstable. However, they explained how aggregate supply expands, which means that investment has two effects; one on the aggregate demand side such as when business spends more; the other on the aggregate supply side, whereby more investment increases capital stock and produces more business. However, in Harrod-Domar’s growth model, which has come under attack from the new growth theory, investment does not matter for long-term growth. The assumptions and perspective of *neoclassical growth theory* will now consider how to understand the source of growth used in empirical models for developed and developing countries. *Neoclassical growth theory* was born as a result of Harrod-Domar’s model and the new growth theory developed as the result of *neoclassical growth theory*.

During the early 1960s, *neo-classical growth theory* was practiced and people generally accepted its approach to modelling growth in the long-term, which has been driven by increasing returns: Solow (1956) and Swan (1956), Arrow (1962), Cass (1965), Koopmans (1965). This kind of framework assumed the *neo-classical model production* of consumption rising as a function of the stock of knowledge increasing within constant return to scale, which returns to each input (labour and capital) as well as smooth elasticity of the substitution between the inputs<sup>11</sup>. For instance, Arrow (1962), in his model of “*learning-by-doing*”, argued that new machines are improved and more productivity will result as the function of the cumulative which will also increase investment for the industry because new knowledge should be discovered as the result of investment. However, Arrow’s model meant that two problems could be encountered which would increase any rates of growth model of increasing returns: existing competitive equilibrium and the function of capital and labour which increase returns to scale. Smith (1776) pointed out the technological improvement in the form of “*learning by doing*” or “*learning by using*” with economies of scale through to the concept of division of labour in the process of the wealth of nations. Furthermore, according to some studies (Lucas, 1988; Stiglitz, 1987; Romer, 1986) it has been argued that the major difference between the

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<sup>11</sup> A recent review by Cowton (2008: 1) stated that: “*The neoclassical theory of the firm presents an impressive analysis in which the primacy of owners’ interests is asserted. It offers powerful insights into the contracting and monitoring challenges that arise when owners, as principals, delegate control to executive managers, their agents. This perspective has had a major impact on debates regarding corporate governance and upon programs of corporate governance reform, especially in the wake of various corporate ‘scandals’*”.



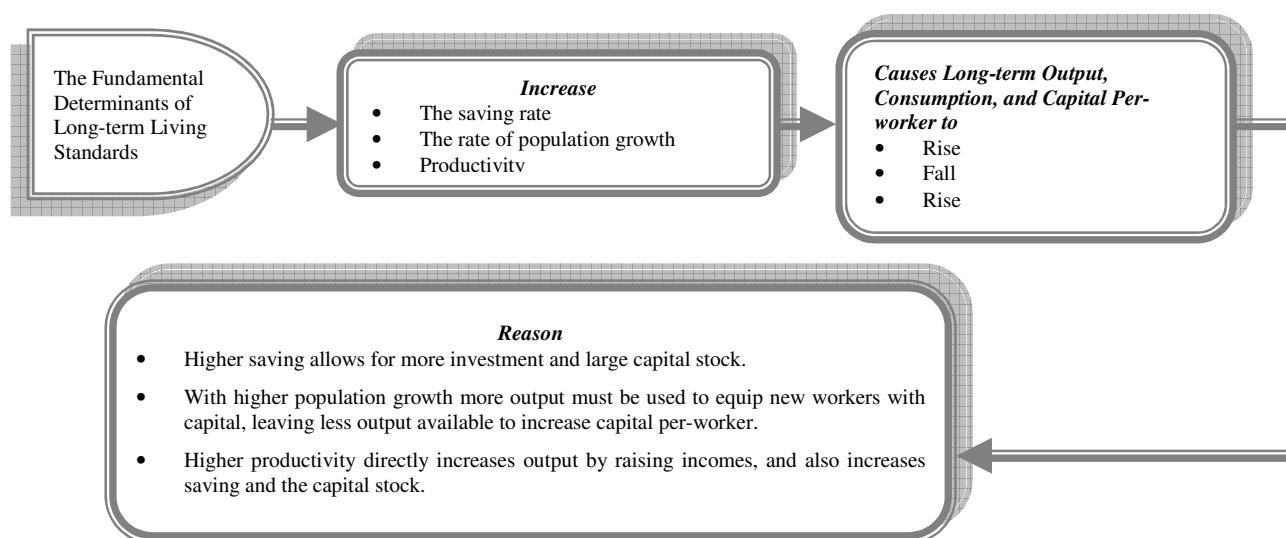
more and less developed countries increased by learning-by-doing. Thus, “*learning-by-doing*” increases the stock of knowledge and human capital, and other factors such as yield quality<sup>12</sup>.

According to Mankiw et al. (1992), the predictions of the Solow model are approximately consistent with the evidence, and they found that savings and population growth affect income in the direction of the Solow model<sup>13</sup>. They explained why the approximate influences of savings and population growth appear too large, giving two reasons. First, the rates given to human capital accumulation, higher saving or lower population growth lead to higher levels of income and, thus, higher levels of human capital. In other words, the elasticity of income with respect to the stock of physical capital is no different from capita or from capitalist share income; this result is supported by Romer’s suggestion that approximates its social return. Second, human-capital accumulation may be correlated with saving rates and population growth rates. This would simply imply that omitting human-capital accumulation biases the estimated coefficients of saving and population growth. Gwartney and Lawson (2003) argued that the Solow model, in physical and human capital, is the key of the economic growth. Mankiw et al. (1995) mentioned three problems relating to the *neoclassical theory* against Solow’s model. Finally, according to the *neo-classical growth model*, as Figure 4.2 shows, the impact of an increase in savings rate leads to higher output, consumption and capital per-worker in the long-term. Strategic policy should then have to make the savings rate as high as possible. Also, more output will not only raise living standards but also lead to more human capital formation and innovation, which will increase productivity and output, which will then increase human capital and innovation again.

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<sup>12</sup> For more explanation see, Chang (1997).

<sup>13</sup> Hansen and Prescott (2002: 1205) point out that “[...] *there is no fixed factor in the Solow production function, population growth has less influence on the growth rate of per capita income and living standards begin to improve. In the limit, the economy behaves like as standard Solow growth model, which displays many of the secular of modern industrial economies*”. See also, Michael (1993).

**Figure 4.2 The Living Standards for the Long-term Process**

Source: Abel et al. (1998).

In conclusion, the neo-classical growth model is simply a general equilibrium model that emphasises the process which leads the economy to its a steady-state crucial role in ensuring convergence to such a steady-state but also implies that, in the steady state, the productivity of capital is zero, the capital labour ratio is fixed and that growth-generated endogenous factors (i.e., capital accumulation or capital transaction) are zero. Hence, in this model the steady-state rate could be positive if some exogenous force (usually technological) is acting upon the system the expression. Furthermore, this model assumes that the rate of technological change is given as exogenous, which does not provide a useful framework for understanding economic forces and policies, such as the financial factors effect. Therefore, this model of financial factors can explain only the equilibrium level of capital stock per-work but, however, not the rate of economic growth. Following the work of Romer (1986, 1990) and Lucas (1988), the endogenous growth model in the next section gives more detail on these channels.

### 4.3 NEW ENDOGENOUS GROWTH THEORY AND THE MACRO-DETERMINANTS OF GROWTH

Since the mid-1980s there has been a new wave of literature and research on the applied economic of growth. This has led to the development of explanations of the differences in the rates of output growth and per-capita income growth in the long-term across the world, according to the so-called new growth theory. For instance, the richest 5 *per cent* of the world's nations averaged a per-capita income over the period 1960-1985 that was about

twenty-nine times the corresponding figure for the poorest 5 *per cent*. In 1985, the richest state in the US was Connecticut, the poorest was Mississippi and the ratio of per-capita incomes worked out at approximately 2 (Ray, 1998). The per-capita income of the aforementioned eight East Asian economies over the period 1965-1990, excluding China, increased at an annual rate of 5.5 *per cent*. For the entire data set between 1980 and 1993, China's per-capita income grew at an annual rate of 8.2 *per cent* which is truly phenomenal (Ray, 1998). Furthermore, over the period 1960-1985, per-capita growth averaged 1.9 *per cent* per year of 102 nations studied by Parente and Prescott (1993) and, in wealthy nations, the productive potential of the economy has been increased by capital accumulation, the opening up of new territories and increased supplies of better quality labour. In addition, so much more has been learnt about how to optimise output from resources through increasing efficiency for each other (Apart and Donaldson, 1971).

The birth of the endogenous growth theory has enabled the development of tractable growth models where the long-term rate can be affected by elements such as technology, government policies and institutional arrangements. This has rekindled interest in the role of financial development in economic growth. The new models of endogenous growth theory began with the works of Romer (1986, 1990), Lucas (1988) and Rebelo (1991), who developed models of non-decreasing returns to a broad class of capital goods, including human capital. The difference between Rebelo's model and Solow's is simply in the specification of the production function, where output and capital in each period ( $t$ ) is expressed by the following equation:

$$Y_t = A K_t \quad (4.1)$$

From this equation there is no exogenous technological change. Therefore, this type of framework, implied by equation 4.1, has been built upon by Arrow (1962), who developed models characterised by non-decreasing returns. Lucas (1988) used the “*multi-good*” model, which was adapted from Krugman (1987). He commenced his model with an aggregate production function in the following equation:

$$Y_t = A_t F(K_t, H_t) \quad (4.2)$$

where  $Y$ ,  $K$  and  $H$  are output, physical capital and human capital with different types of investment at  $t$  and where the parameter  $A$  represents the level of technology. However, in

general, school enrolment rates are used as simple proxy measures for human capital. One of the main contributions was presented by Romer, who published a series of papers on this area in the mid-1980s.

1. In the endogenous growth model, the assumptions of constant returns to scale and diminishing returns of individual functions are abandoned, which means that the economy grows without bounds and no convergence around economies is predicted.
2. Technological change becomes endogenous. This implies that a change of capital input has both direct effects on output and indirect effects on technology change. From this it could be seen that the endogenous growth model may better reflect the reality of economic policy and practices of the transmission of advanced technology and new knowledge.

Romer (1986: 1003) assumed that *“the creation of new knowledge by one firm is assumed to have a positive external effect on the production possibilities of other firms, because knowledge cannot be perfectly patented or kept secret”*. His model stressed integration within a competitive framework by rediscovering the simple  $Y = AK$ , dependent on production of knowledge and function of physical capital. The knowledge stock ( $A$ ) is a public good, which, like ( $A$ ) in Solow’s model, introduces positive spill-over into the competitive framework for increasing returns to scale to the production function. This model, therefore, treats *“learning-by-doing”* as *“learning-by-investment”*. Consider the following equation, where production function depends only on the capital stock:

$$Y_t = f(K_t) \quad (4.3)$$

where  $Y_t$  and  $K_t$  denote the output and stock of capital at time  $t$ , respectively. However the following equation is different from equation 4.4.

$$G_y = \frac{dk_t}{y_t} f(k_t) = s_t \varphi_t \quad (4.4)$$

where  $G_t$  is the growth rate of output, ( $s$ ) is the savings rate and  $\varphi$  is the marginal productivity of capital. In this case, if decreasing  $\varphi$ , output growth will go to Zero as capital stock and  $K$  grows over time. Keller (1998: 1470) has discussed the general class of models developed by Grossman and Helpman (1991) and argued that cross-country R&D spill-overs

are important sources of productivity growth, pointing out that productivity spill-over exists if “the importing country pays less than the intermediate good’s full marginal product”<sup>14</sup>.

Barro (1991) found human capital to be a significant contribution to growth rate but, in his regression analysis model, he left unexplained a good deal of the weak performance, for example, of Sub-Saharan African and Latin American countries. Romer (1990), however, extended his model to include a framework of competition to increasing returns of scale, through to fixed cost financial elements in the intermediate goods sector, in which the treatment of knowledge stock is usually similar to physical capital and assumed to be dependent on cumulative Research and Development (R&D) activities. Thus, if the output of capital is doubled, the amount of output is doubled too, as follows:

$$\dot{K} = sY - \delta K \quad (4.5)$$

This equation, together with the  $Y = AK$  production function gives:

$$\dot{Y}/Y = \dot{K}/K = sA - \delta \quad (4.6)$$

So, as  $sA > \delta$ , income will grow forever, even without the assumption of exogenous technological improvement. From this equation it can be seen that savings lead to growth forever, but, in the neoclassical model, savings lead to the rate of growth temporarily. Levine (1997) examined two financial function factors of capital accumulation and technological innovation which could affect economic growth. Basically, in this situation, the first class of growth models used capital accumulation (capital externalities or capital goods produced) as discussed by Romer (1986), Lucas (1988) and Rebelo (1991), using constant returns to scale without using non-reproducible factors to generate steady-state per-capita growth models. The result of these models affects the steady-state growth by influencing the rate of capital formation. On the other hand, Romer (1990), Grossman and Helpman (1991), and Aghion and Howitt (1992) used second class growth models to focus on the invention of new production processes and goods. The results obtained from these models showed that the function performed by the financial system was affected by the steady-state growth when the rate of technological innovation altered.

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<sup>14</sup> “Spill-over” means that the aggregate of trading in the financial market is related to the liquidity of individual equities (Levine and Schmukler, 2006).

***Empirical Framework in Variation Study***

In the previous section, the literature review focused on the theoretical consideration “Theoretical Framework” of the endogenous economic growth model and the effects of stock market development on saving and investments. This section reviews the previous empirical studies that analyse the effects of financial development along with the stock market mechanism. In endogenous growth theory, the growth rate is a positive function of exogenous technical innovation with the best chances of successfully initiating new goods and production processes as the result of some empirical studies which have been conducted (see King and Levine, 1993b; Galetovic, 1996; Blackburn and Hung, 1998; Morales, 2003; Acemoglu et al., 2003). Recent endogenous growth models presented diverse approaches to explain the effect of financial markets on growth rate in the economic system situation. For instance, Bencivenga and Smith (1991) and Levine (1991) were the first to propose “*endogenous growth*” framework models to identify channels through which financial markets affect long-term economic growth. Their studies emphasised that financial markets will help to diversify an agent’s liquidity risk and capital accumulation to attract more savings into productive investment and prevent the early removal of physical capital invested in long-term projects. Within the existence of financial markets there will be more capital intended to use rates of growth which could be maintained in productive investments. Hand in hand, *endogenous growth theories* illustrate that the rate of economic growth is related to financial development, technology and level of income. Greenwood and Jovanovic (1990) argued that income per-capita will assist financial intermediaries to process the transmission channel between financial structure and economic growth to produce better information, enhance resource allocation within positive growth and improve investment decisions and the impact of economic growth rate<sup>15</sup>. They further mentioned that, as income level increases, financial structure becomes more extensive and economic growth becomes more rapid. Furthermore, income in equality will be across the board for rich and poor nations.

The group of authors who considered the economic growth theory, as Table 4.1 demonstrates, include Barro (1991), Levine and Renelt (1992), Mankiw et al. (1992), Barro and Lee (1993) and Levine and Zervor (1993). Barro (1991) investigated the new growth theory by using neoclassical growth models such as those of Cass (1956), Koopmans (1965) and Solow

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<sup>15</sup> See also Townsend (1979), Gale and Hellwig (1985), Diamond (1984), Diamond and Dybvig (1983), Gertler (1988) and Levine (1997).

(1956), measuring human capital to examine the growth of per-capita income from 1960 to 1985 in a cross-section of 98 countries using data from Summers and Heston (1988). Barro discovered that there is no significant relationship between the initial level of GDP and the per-capita growth rate; the correlation coefficient was 0.09. This finding accords with recent models, such as Lucas (1988) and Rebelo (1991), in which non-diminishing returns to capital are assumed, while the growth rate of per-capita GDP is positively related to initial human capital proxied by school enrolment rates. Countries with high ratios of human capital also seem to have lower fertility rates and a higher ratio of physical investment to GDP. Furthermore, growth rates are positively related to political stability and inversely related to a proxy for market distortions. Mankiw et al. (1992) examined whether the predictions of the Solow (1956) growth model are consistent with international variations in the standard of living, which used three samples of 98 non-oil countries in the period 1960-1985 in intermediate 76 developing countries and 22 OECD countries with populations of more than one million. The authors claimed that the data supported Solow's neoclassical model against the new endogenous growth models, which means that the assumption of non-diminishing returns to capital could predict the variations in initial per-capita income between countries.

Knight et al. (1993) tested the model by examining samples of 76 developing countries and 22 OECD countries, using panel data including the rate of technical progress, of trade policy and the stock of infrastructure investment *proxied by the flow variable*, and government-fixed investment as a proportion of GDP. The result of the growth is that output per-worker is positively related to the saving ratio and negatively to the growth of population and the initial level of GDP, while the human capital investment is significant and increases the productivity of physical investment. Barro and Lee (1993) tested data from 116 countries during the 1965-1985 period and found that five factors or variables explained 80 *per cent* of the differing growth rates between countries (see Table 4.1).

1. The initial level of real per-capita GDP measured by education and health has a negative effect.
2. The investment ratio has a positive effect.
3. The ratio of government consumption to GDP has a negative effect.
4. Market-distortions, as measured by the black market rate of foreign exchange, have a negative effect.

5. Political instability, as measured by the number of political revolutions per year, has a negative effect.

**Table 4.1 The Macrodeterminants of Growth**

Factors	Barro (1991)	Mankiw et al. (1992)	Knight et al. (1993)	Barro and Lee (1993)	Levine and Renelt (1992)	Levine and Zervos (1993)
Case study	98 countries 1960-1985	98 countries 1960-1985	98 countries 1960-1985	116 countries 1965-1985	119 countries 1960-1989	98 countries 1960-1985
Dependent variable	Growth of per-capita income	Level of per-capita income	Growth of output per-worker	Growth of GDP	Growth of per-capita income	Growth of per-capita income
Convergence	Conditional	Conditional	Conditional	Conditional	Conditional	Conditional
Savings-investment ratio	Not considered	Significant positively	Significant positively	Significant positively	Significant positively	Not considered
Population growth	Not considered	Significant positively	Significant positively	Not considered	Not robust	Not considered
Education	Significant positively	Significant positively	Significant positively	Significant positively	Significant positively	Significant positively
Government consumption distortions	Significant negatively	Not considered	Not considered	Significant negatively	Not robust	Not considered
Political instability	Not considered	Not considered	Not considered	Significant negatively	Not robust	Significant negatively
Monetary and fiscal variables	Not considered	Not considered	Not considered	Not considered	Not robust	Weak
Trade variables	Not considered	Not considered	Significant positively	Not considered	Not robust	Weak
Inflation	Not considered	Not considered	Not considered	Not considered	Not robust	Not significant

Source: Thirlwall (2006).

The "new" endogenous growth theory, however, like many theories which consider various approaches to the marginal productivity of capital, does not converge to zero as capital grows over time. As already indicated, it is possible for real per-capita output to grow endogenously, even in the obstacles of exogenous productivity growth rate by altering the rate of human capital accumulation or technological development. Furthermore, investment in physical and human capital, respective of the endogenous growth theory, appropriate policies and options, assists private agents which could influence long-term steady growth. Therefore, in short, the overall policy regime of a country, including its taxes, financial structures, market and regulatory regimes, and levels of liberalisation and macro-economic distortions, could alter savings and investment allocation in various ways that would shape long-term growth rates. Solow (1956) argued that technological progress is the exogenous variables that most affects the growth rate in the long-term. He also argued that financial markets could only affect the equilibrium level of capital stock per-worker and not the rate of economic growth.

#### 4.4 HOW STOCK MARKETS AFFECT ECONOMIC GROWTH

The endogenous growth literature and recent theoretical studies have tried to provide a link between the literature of endogenous growth theory and financial markets. Gurley and Shaw (1955) were the first to study the relationship between financial markets and rates of economic growth after Fisher (1933). They argued that the difference between developed and developing



countries is that the financial sector is accorded greater status in developed countries than is the case in developing countries. Gurley and Shaw found that financial markets contribute to economic development by enhancing physical capital accumulation. Their conclusions were supported by Friedman and Schwartz (1969). Although prior to the 1970s knowledge of the relationship between financial markets and real growth rates suffered due to the lack of evidential studies, the reason behind this may be that no model has been supplied to explain the mechanism by which the financial market affected economic growth. Moreover, limited data was available in this period. This remained the case until economists began to introduce models with which to analyse financial markets and economic growth behaviour. For instance, Goldsmith (1969), McKinnon (1973) and Shaw (1973) found that the development of financial markets has been significantly correlated with the rate of economic growth. Goldsmith (1969) argued that, as real income and wealth increase, then this, in turn, will lead to the size of financial markets growing as well<sup>16</sup>. Shaw (1973) and McKinnon (1973) were the first to study the importance of financial sector development, examining the effects of government intervention on the development of the financial sector to achieve a higher rate of economic growth. These studies suggest that financial intermediation has a positive effect on the steady-state growth (see Greenwood and Jovanovic, 1990; Bencivenga and Smith, 1991) and government intervention has a negative effect on the growth rate in the financial sector.

Bencivenga and Smith (1991) argued that financial markets promote growth to reduce capital liquidity risk, which leads to increasing funds available for productive capital<sup>17</sup>. Also, Greenwood and Jovanovic (1990) argued that financial intermediaries influence technological choice in their risk sharing and pooling services by facilitating high yield investment and, thereby, growth using the pooling of idiosyncratic investment risks across a large number of investments. Fulgieri and Rovelli (1998), Levine (1991), Levine and Zervos (1998a), Bencivengo et al. (1995) and others have argued that the greater liquidity of stock markets will provide shifts for long-term growth and higher return technologies process. Nevertheless, more recent research on the role of the stock market in the economy has argued from a different perspective. The emphasis is that having developed stock markets could enhance economic growth through the productivity of investment but not via the savings function.

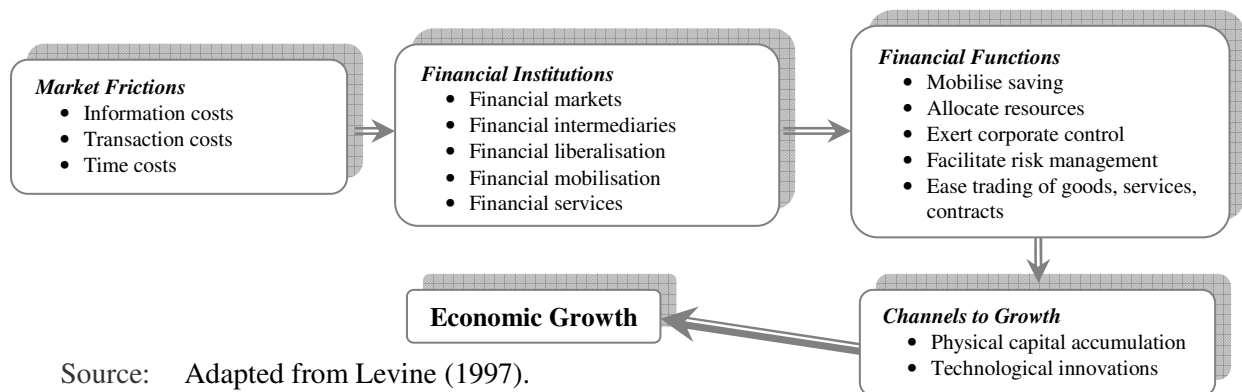
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<sup>16</sup> Goldsmith (1969: 400) pointed out that: “[the financial sector] accelerates economic growth and improves economic performance to the extent that it facilitates the migration of funds to the best user, i.e. to the place in the economic system where the funds will yield the highest social return”.

<sup>17</sup> Also Bencivenga and Smith (1991: 207) indicate that “differences in the extent of financial markets across countries seem to depend primarily on legislation and government regulation”.

Levine (1992) argues that economic growth even influences the type of financial intermediation systems which the economy could afford. Therefore, when real per-capita income is low, the economy will select simple forms of financial intermediary whose main purpose will be to mobilise savings, diversify productivity risks and control liquidity risks. Furthermore, an increase in per-capita income enables the economy to develop more sophisticated financial intermediaries, whose financing will be correspondingly more costly as they will be involved in monitoring investment projects and the identification of the most cost-effective innovations. Levine (1997) examined the two channels, *capital accumulation and technology innovation*, which affect economic growth. He also examined five financial functions that affect saving and allocation decisions and influence economic growth rates, as Figure 4.3 demonstrates.

**Figure 4.3 Theoretical Approaches to Finance and Growth**



Some authors tend to argue that stock markets do not raise much capital accumulation. They are also relatively insignificant in the development process. Atje and Jovanovic (1993)<sup>18</sup> used a reduced form of equation driven by the argument of Greenwood and Jovanovic (1990) to determine empirically whether stock market development has a transitory level effect or permanent growth effects. They established a significant correlation between growths over the 1980-1988 period and the value of the stock market for 72 countries divided by GDP. In addition, they concluded that a stock market can raise a typical developing country's economic growth by around 2.5 per cent per annum. Atje and Jovanovic succeeded in obtaining a result for the hypothesis that development of the stock market has positive effects on growth but this

<sup>18</sup> Atje and Jovanovic used the cross-section model to explain growth in per-capita output as follows:

$$G_i = \alpha_1 + \alpha_2 I_i + \alpha_3 S_i + \alpha_4 N_i$$

where  $G$  is growth in per-capita output,  $I$  is investment as measured by output,  $S$  is the product of the level of stock market activity within investment, and  $N$  is growth in labour force. They assume that investment and stock market activity are both endogenous growth theory (Additionally, see Harris (1991)).

is, after all, in the short period between 1980-1988 which does seem to bear a significant impact upon long-term trends. Levine and Zervos (1998a) examined whether stock markets and banks promote economic growth by following the methodology of Atje and Jovanovic (1993) utilised for 47 countries during the 1976-1993 period and by enlarging the sample size and time coverage in diverse measures of stock market development. Thus, they recognised that stock market liquidity is strongly related to growth, capital accumulation and productivity, but stock market size does not seem to be correlated to economic growth. Consequently, the banking sector lending to the private sector has a robust impact upon economic growth. Harrison et al. (1999) presented a theoretical model of banking and growth, a feedback effect which is generated between financial development and economic growth rates. They argue that economic growth increases the average distance between borrowers to encourage regional specialisation and reduces the cost of intermediation. This, in turn, will increase investment and economic growth.

### ***Empirical Framework***

Many authors emphasise the links between the state of development of a country's financial sector and the level and rate of economic growth. Essentially, the argument is that the functions of the financial sector provide a conceptual framework of economic growth rates<sup>19</sup>. This type of empirical study started with Goldsmith (1969) and McKinnon (1973, 1989) and more recent studies have been conducted by Ghani (1992), King and Levine (1993a, b), Degregorio and Giudotti (1995) Rousseau and Wachtel (1998), Beck et al. (1999a) Levine et al. (2000), Levine (2000, 2004), Deidda (2006) and others. Goldsmith (1969) used data from 35 developed and less developed countries during the 1860-1963 period to examine the value of financial intermediary assets as a share of economic output. He found that the size of the financial intermediary sector and growth is positively correlated with the quality of financial function measured by financial sector. King and Levine (1993) and Levine and Zervos (1995) concluded that stock markets offer different services from those provided by banks. They used data from 49 countries over the period 1976-1993 to investigate the development of stock markets and rates of economic growth. They discovered that stock market development is strongly correlated with growth rates of real GDP per-capita and real physical capital per-

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<sup>19</sup> Barro and Sala-I-Martin (1995: 443) point out that *"it is unclear whether the relation between growth and financial sophistication isolates the effect of an exogenous improvement in financial system on the growth rate, or, inversely reflects the impact of good growth prospects on the incentive to develop the financial sector."*

capita. In addition, they discovered that both stock market liquidity and banking development predicted future economic growth rates when they were entered into the growth regression. However, they did not elucidate upon the precise nature of this difference.

Singh (1992a, b; 1996 and 1999) and Singh and Weisse (1998) argued that stock market development in developing countries during the 1980s and 1990s is unlikely to have resulted in achieving quicker industrialisation and faster long-term growth rates and has also not led to an increase in aggregate savings as a result of greater new-issue activities on the stock markets in the countries studied (Turkey and Mexico) where aggregate savings fell during the 1980s. The World Institute for the Development of Economic Research (WIDER) stated in their annual report (1990: 6) that: *“The need to attract foreign capital in non-debt creating forms is only one reason, and not the most important reason, why developing countries should wish to foster their emerging equity markets. Equity markets are a vital part of economic development; they encourage savings, help channel savings into productive investment and encourage entrepreneurs to improve the efficiency of investment.”*

Liu (2002) examined the direction of causality between financial development and economic growth, using Geweke’s (1992) study as his model to test pooled data for 109 developing and industrialised countries during the 1960-1994 period<sup>20</sup>. He recognised five interesting points. First, financial development in general led to economic growth in 109 developing and industrialised countries. He proposed that financial deepening in many countries has yielded economic structure. Second, there is evidence of bi-directional causality when the sample is split into developing and industrialised nations. This illustrates that financial depth stimulates economic growth and, at the same time, economic growth propels financial development. Third, financial deepening contributes more to the causal relationship in developing countries than in industrial countries, thus implying that financial intermediaries have large relative effects on less-developed economies compared to more developed countries. In other words, developing countries have more room for financial and economic improvement. Fourth, the sampling has a gap in the long-term effect of financial development on economic growth, which suggests that the impact of financial deepening on the real financial sector takes greater time. Fifth, financial development may enhance economic growth both through more rapid capital accumulation and technological change, enhancing the channel productivity far more

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<sup>20</sup> However, most empirical studies use Granger causality modelling analysis. For more comprehensive investigation, see Line (2002).

strongly. This suggests that the causal relationship between finance and TFP growth is stronger for developing than for industrial economies.

Al-Awad and Harb (2005) examined the link between financial development and the stock market in Middle East countries during the 1969-2000 period, using panel cointegration with time series methodologies. They found that, in the long-term, financial development and economic growth seem to be related to some level of growth but, in the short-term, it demonstrates that causality runs from economic growth to financial development. They suggest that neighbouring countries should adopt measures to reduce financial repression and to help increase financial development; this view is supported by Lucas (1988). Atindéhou et al. (2005) examined the relationship between financial intermediation and economic growth, using time series data for the 1961-1997 period for the Economic Community of West African States (ECOWAS). They discovered that, in three countries, there was no significant causal relationship between economic growth and all the financial variables used. In the remaining eight countries a one-way relationship could be observed from the variable, depending on the countries and the variables used.

#### **4.5 SUMMARY AND CONCLUSION**

This chapter has provided a comprehensive review of theoretical and empirical literature that links together endogenous growth theory and current theory of the functions of financial market and institutions, in order to study how financial market development affects economic growth rates. The argument that the stock market influences real economic growth rate depends on liquidity bands, the risk between sharing and pooling and, finally, the information and monitoring functions. Additionally, there is a link between the financial market and endogenous growth economic theory model, which is made by some authors, such as Romer (1986), Lucase (1988), Rebelo (1991) and Chick and Dow (2001, 2005) etc, in order to include the effect of stock market development. Other significant studies have used endogenous growth models to identify the channels through which financial markets affect the long-term growth rate of the economy. These include Greenwood and Jovanovic (1990), Berthelemy and Varoudakis (1996), Greenwood and Smith (1997) and Boyd and Smith (1998), all of which predict a two-way causality between financial development and economic growth.

Nevertheless, the birth of the new endogenous growth theory has facilitated the development of improved growth models where the long-term rate could be affected by a number of variables. These include technology, education and health policies, the process of economic development, capital accumulation, government policies and institutional activities and the extent of financial development. Additionally, the role of financial factors in the steady-state of the long-term rate in the neo-classical model could be related to the level of capital stock per-worker or to the level of productivity, but not to their respective rates. Notwithstanding this, external to the steady-state, financial elements could affect the transitional growth rate where it is not in the long-term growth rate. During development of the endogenous growth theory, available literature and the current research provided insights into how the reform of economics on long-term growth rate related to the macro-economic and financial institution performance. This framework has been reviewed by Stiglitz and Ellerman (2001), Dabrowski et al. (2001), Currie (2003) and other sources from the World Bank and IMF.

The argument of this chapter is that economic growth is a function of stock market development and economic reform indicators, with the main determinants of growth being set as the control variables. A comprehensive theoretical framework linking stock market development to economic growth has been presented, from which a theoretical consideration has been made of how the financial system and stock market development could affect real economic growth in the neoclassical Solow-Swan model (1956) and the endogenous growth model of Lucas (1988) and Romer (1986). A theoretical link between finance, stock market development, saving, investment and economic growth has been identified. The next chapter theoretically and empirically investigates the stock market in emerging countries, exploring the issue of whether the stock market and banking system are complementary or substitutes for each other. The relationship between economic reform programmes, macro-economic reform and stock market performance variables will be introduced.

## CHAPTER FIVE

### EMERGING STOCK MARKETS

#### 5.1 INTRODUCTION

The main outcome of Chapter Four was the establishment of a significant relationship between economic growth and the stock market. Building upon this understanding, Chapter Five comprehensively considers a number of theoretical and empirical studies by Levine (1991), Demirgüç-Kunt (1992), Atje and Jovanovic (1993), Levine and Zervos (1995), Demirgüç-Kunt and Levine (1996), Harris (1997) and Demetriades and Andrianova (2004), among others, who have contributed to an understanding that stock market development affects economic growth in developing countries. Stulz (1997) explained that economic reform in emerging markets has led to an increase in equity that flows rapidly from industrial or developed countries to developing markets; this was supported by empirical evidence in Bekaert and Harvey (1995) and Henry (2000a) where financial capital is classified as flowing from industrial countries to emerging economies, to their mutual benefit. In addition, endogenous growth models demonstrate that the rate of economic growth is related to financial development, level of technology and income distribution.

Financial systems are, today, classified as bank-based or market-based (stock markets). This division is exemplified by the Anglo-Saxon market-based models of capitalist economies which allow for private investment and private ownership, and the other model, Germany, where the bank-based model has been practised more widely by Eastern European countries. These latter models were centrally-planned or, to be politically correct, non-socialist economies (Hall and Soskice, 2001). The UK and US are market-based and these countries have similar long-term growth rates<sup>21</sup>. Throughout the world, the type of financial model practised by sovereign countries reflects the type of government as a regime in power. Many Eastern European, Middle Eastern and African countries, including Libya, have practised socialism for a long time. However, in the light of recent trends, and under the direction of the

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<sup>21</sup> Demirgüç-Kunt and Levine (1999: 2) argue that in “bank-based” financial systems such as those of Germany and Japan, banks play a significant role in mobilising savings, overseeing the investment decisions of corporate managers, allocating capital and providing risk management vehicles. In “market-based” financial systems such as in the UK and US, securities’ markets share centre stage with banks in terms of transferring society’s savings to firms, exerting corporate control and easing risk management.

IMF and World Bank, many countries are now reforming their economies and gradually adopting capitalism in order to rescue their economies. In this context the World Bank (1994, 1989) has argued for the establishment and promotion of stock markets in developing countries in line with those existing in developed countries.

As mentioned in Chapters One and Two, Libya has been subject to many economic sanctions in recent years. It has now started to reform its economy akin to most developing countries. Today, the Libyan state is gradually transforming the economy from being centrally planned to a free market orientation, with the aim of creating more scope for private ownership in the retail trade and for small and medium-scale business and agricultural sectors to investment sourced from both local and foreign companies. The attempt to consolidate efforts towards liberalisation is intended to solve the current economic problems and provide more employment opportunities for Libyan nationals by increasing the economic growth rate. The key objective behind the establishment of the Libyan stock market was to contribute, and to support, its allocation process in order to strengthen the national economy (see Chapter Two: Subsection 2.4.3). The purpose of this is based on the growth theory model of the emerging economy which is similar in many aspects to the Libyan economy. Therefore, this explanation will consider the emerging market experience, attribute part of the success of developing countries to the fact that the majority of developed nations have stock markets and that, by developing its stock market, Libya achieved significant levels of economic growth. Thus, the case for the development of a stock exchange in Libya is founded upon the assumption that stock markets contribute to economic growth. This assumption is tested by several empirical examples (see Chapters Seven and Eight). An analysis of the role of the stock exchange in emerging economies is also undertaken.

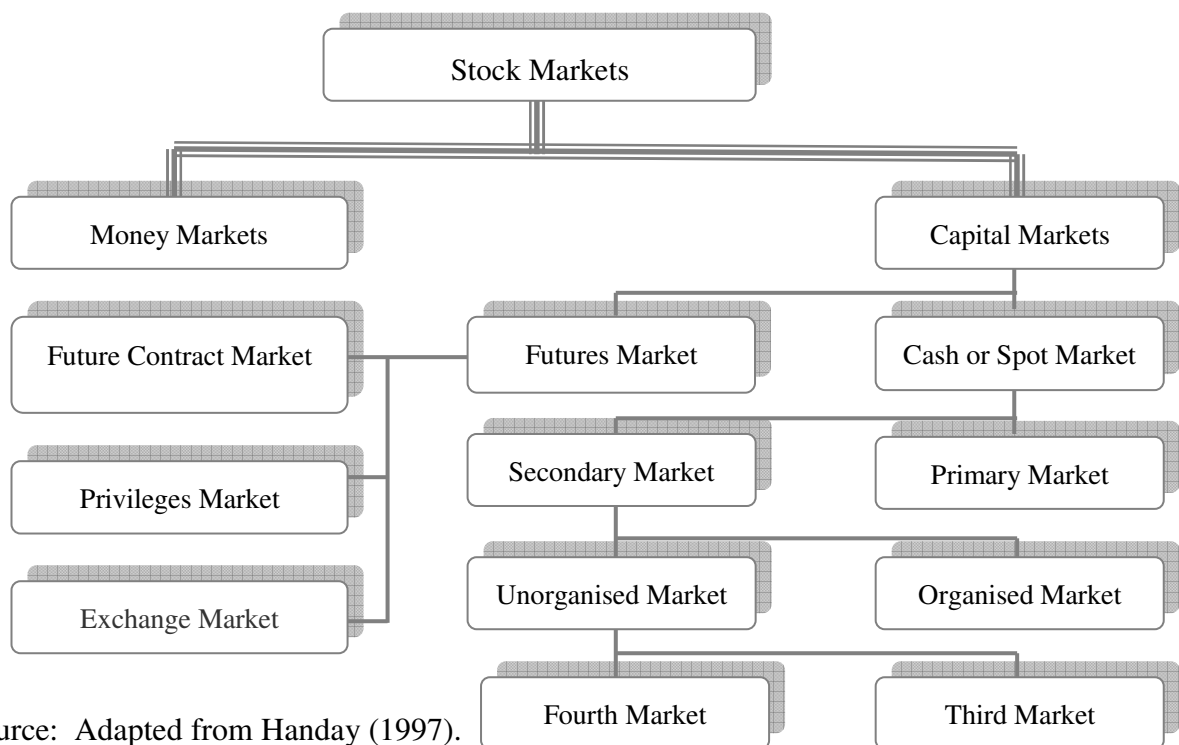
This chapter, therefore, is divided into ten main sections, related to stock market performance. Section 5.2 commences with various definitions of stock markets. In Section 5.3 the functions of the stock market are explained, whilst Section 5.4 describes the importance of the stock market. Section 5.5 addresses the emerging market and economic growth. Five potential stock market performance variables are identified in Section 5.6 and, in Section 5.7, financial maturity measuring variables are identified. In Section 5.8 financial crises in developed and emerging markets are discussed. Section 5.9 deals with the relationship between economic reform and stock market performance. Section 5.10, is concerned with the relationship between macro-economic reform and stock market performance variables and, finally, the chapter's summary and conclusions are provided in Section 5.11.



## 5.2 DEFINITION OF A STOCK MARKET

A stock market can be considered a very sophisticated market place, where stocks and shares are the traded commodity. At the same time, it is central to the creation and development of a strong and competitive economy. It is a key to structural transformation in any economy from traditional, rigid and insecure bank-based systems to a more flexible, more secure economy that is immune to shocks, fluctuations and lack of investors' confidence (Stapley, 1986). According to Arnold (2004), stock markets are places where governments and industry can raise long-term capital and investors can purchase and sell securities. Typically, whether markets trade in shares, bonds, cattle or fruit and vegetables, they are simply mechanisms to allow the possibility of trade between individuals or organisations. Whilst some markets (e.g. for livestock) are physical spaces where buyers and vendors meet to trade, others (e.g. for foreign currency) are national networks, based on communication using telephone lines and computer links with no physical meeting place. Additionally, very few stock exchanges around the world still possess a physical location where buyers and sellers meet to trade. Stock markets can be classified into debt and equity markets, or may involve short-term debt instruments (money markets) and longer-maturity financial assets (capital markets), including cash or spot market and futures markets, as shown in Figure 5.1.

**Figure 5.1 Classification of Stock Markets**



Source: Adapted from Handay (1997).

### 5.3 THE FUNCTION OF STOCK MARKETS

Many people may not see the stock markets and their economic functions as being important to them but, in fact, they represent a relationship between the disparate sectors in social society and between savers and producers as the saving sector needs to employ their savings in more beneficial and ambitious projects. Additionally, the productive sectors always require financial sources to assist them in continuing to perform more in the function of economy, in which stock market performance and functions of basic economy transfer funds from people who have amassed surplus to those who have a paucity of funds (Henry, 1997).

**Figure 5.2 Flow of Funds through the Financial System**

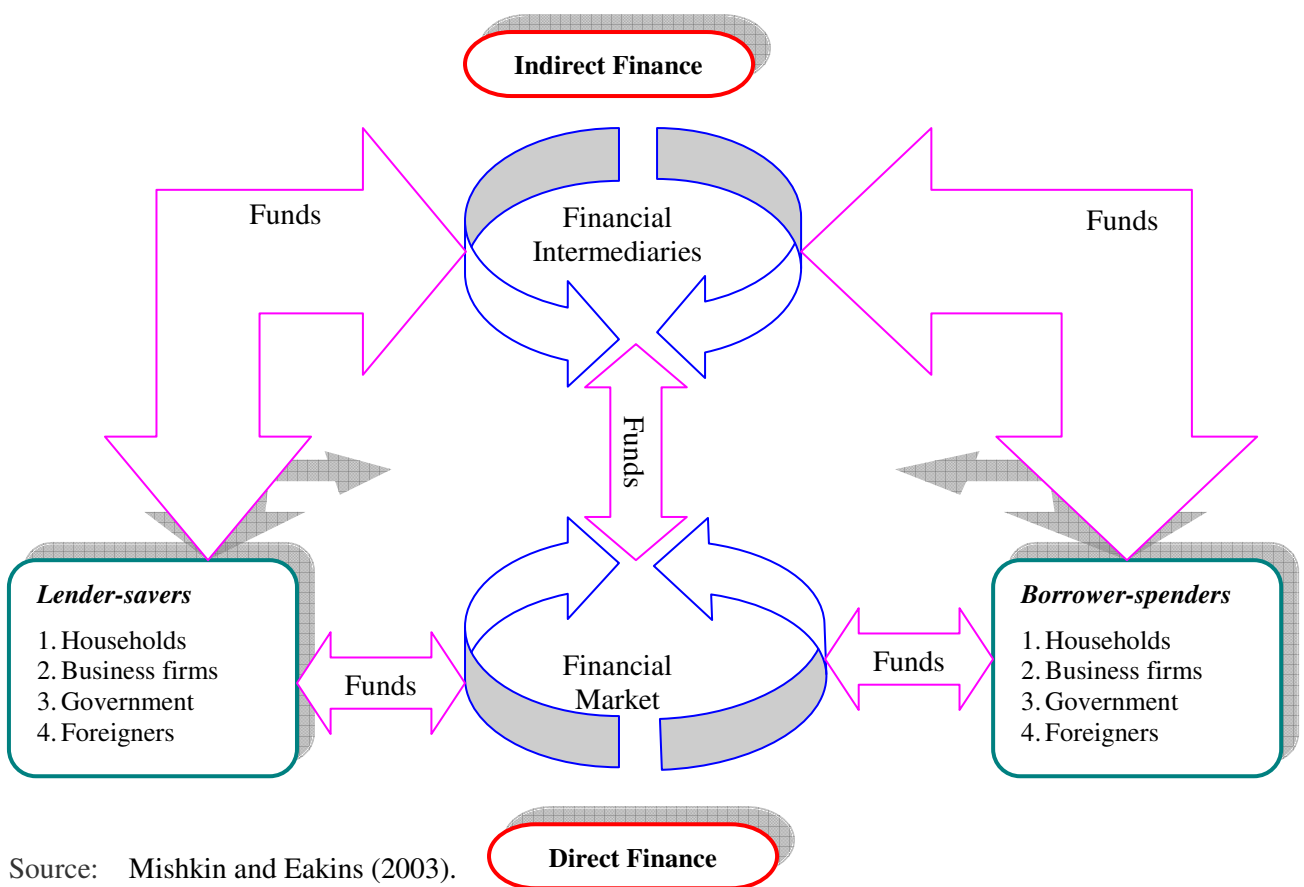


Figure 5.2 shows that borrower-spenders must borrow funds from lender-savers to finance their spending in two ways. The first is an indirect transfer by financial intermediary institutions, such as banks and other commercial organisations; the second is a direct transfer where borrowers obtain funds directly from lenders from the sale of financial instruments (securities). As the financial intermediary holds the largest part of the investment to reduce the risk to the economy, and low interest rates would lead to increased investment, financial intermediary institutions work on the transfer of funds from lenders to borrowers more

efficiently compared with the absence of these institutions. In other words, intermediary institutions have a better incentive to assume the risks resulting from the possession of investment instruments because they have huge financial possibilities allowing them to diversify their portfolios and reduce investment risk rate, which is assisted by the availability of its financial experts. Their specialists take advantage of a rising surplus from the management of purchasing and selling these investment tools. In addition to the previous discussion, the economic function of these markets can be identified in the following ways.

1. To provide or increase the amount of financial resource available. The stock market offers many opportunities for both creditors and civilians via the provision of multiple investment channels.
2. To provide financial information and projects relating to various financial assets available in the stock market, regarding information of the financial situation of companies, thus reducing the cost of access to such information in terms of effort, time and risk.
3. To provide liquidity for owners of various financial assets.
4. To assist in the development of diverse methods of financing in the short, medium and long term for the projects.

In point of fact, it can be observed how important a stock market is for the economy, since it allows movement of funds from persons who possess them and have no investment opportunities to those who enjoy these opportunities, by using the stock market function to increase production and to achieve economic efficiency and improve the level of prosperity in society. Financial intermediaries include commercial banks, savings banks, investment banks and specialised lending institutions, insurance companies and pension funds. These institutions play the crucial role of mediator in transferring funds from lenders to borrowers. The common factor between these intermediaries is the possibility of accessing funds through the creation of the debt on the same (in deposits coffers), then borrowing from the public to invest these funds via the purchase of investment instruments “*stocks, bonds*”.

#### **5.4 THE IMPORTANCE OF STOCK MARKETS**

Stock markets perform a central role in economic development worldwide. Theorists and researchers present diverse opinions whilst arguing the importance of stock markets in increasing economic development in recent years by attracting and consolidating savings and

other forms of capital, which is so critical for the development and growth of both the private sector and trade in general. This has increased the stock market's role in commerce, information technology, communication and management. Singh (1999: 347) suggests three critical elements of a stock market which can improve economic growth:

- Increasing savings and investments;
- Improving the productivity of investments;
- Raising the profitability of existing capital stock.

The most significant contribution to the theoretical literature of stock market development<sup>22</sup> and economic growth has been made by Levine (1991), Bencivenga and Smith (1991), Diamond (1996) and Fulghieri and Rovelli (1998) who supported the stock market for economic growth and further held that stock market liquidity is necessary for economic growth. Levine (1996) conducted an empirical study on 38 cases from developed and developing countries and inferred that stock markets might affect economic activity via the increase of liquidity. At this point an addition of increased liquidity could be the reason for a poor or slower growth rate in economic growth. However, this needs to be further investigated to establish what level of liquidity could guarantee economic growth. It has more to do with the secondary market, where stocks are traded, than the primary market, where stocks are issued, which can assist the new firms listed in increasing their capital. To alleviate their worries, liquid equity markets make investment less risky and more attractive because they allow savers to acquire an asset equity and to sell it rapidly and inexpensively to facilitate access to their savings or in case they wish to alter their portfolios.

Based on these arguments Singh (1992a, 1996, 1997 and 1999) and Singh and Weisse (1998) argue that stock markets in developing countries do more harm than good and that a bank-based financial system is more suitable for the developing countries. Singh (1997: 780) points out that, *“Stock markets are potent symbols of capitalism but paradoxically capitalism often flourishes better without their hegemony. [...] Developing countries simply cannot afford the luxury of stock markets. As Keynes noted [...], when the capital development of a country becomes the by-product of the activities of a casino, the job is likely to be ill-done.”* On the other hand, Kenny and Moss

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<sup>22</sup> See a more comprehensive list of studies concerning development of stock markets in an early study by Cross (1973), French (1980), Gibbons and Hess (1981), Lakanishok and Levi (1982), Keim and Stambaugh (1984), Jaffe and Westerfield (1985), Smirlock and Starks (1986), Anup and Kishore (1994), and Agrawal and Tandon (1994), among others.

(1998) have gone to some lengths to reject Singh's suggestion that stock markets will cause such problems as to make them do more harm than good for developing economies, and to develop a justification for their opinion that the focus should be on stock markets rather than on banks in developing countries. They argue that, first, short-terms becomes less necessary with the creation of investment instruments that no longer have to match the preferred liquidation dates of equity holders. As stock can be sold at any time, much of the liquidity risk will be reduced. Second, stock markets can make equity finance increasingly cheaper for firms. Stock markets can do that by encouraging new supplies of capital. This, in turn, reduces the average cost of capital and new investors entering the market will raise price-to-earnings (P/E) ratio. Finally, companies, by financing their activities through issuing equities, will have the opportunity to take risks much greater than they could with finance from a bank loan, they will also be more willing to take risks than company owners because that risk has been diversified among many investors. They also argue that because of the need for reserve requirements, moving capital from the informal market to the banking sector crowds credit; stock markets are free from this problem.

In conclusion, there are many factors which have helped financial markets to gain prominence during the 1990s in many countries. These include an increase in the private sector's role in various economic activities, innovative technological advances and the phenomenal speed of access to financial information. In addition, there have been advances in modes of communication and the emergence of new and effective financial tools besides new legislation that guarantees freedom of trade and movement of capital. All of these indicate the significance of stock markets in providing further opportunities for growth. Fortunately, the last few years have witnessed an increase in the importance of developing and establishing stock markets across the Arab world, whatever the reason underlying the establishment of a particular stock market, which bears many advantages such as reducing the costs of financing and vital contributions to a nation's capital market (Abdelnour, 2003). As a result, stock markets have been established in Bahrain, Egypt, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Saudi Arabia and Tunisia.

## **5.5 EMERGING STOCK MARKETS IN DEVELOPING COUNTRIES**

In recent years emerging markets have had much greater importance in the worldwide investment community. For instance, Korajczyk (1996) argued that emerging markets have become more integrated with the worldwide capital markets which have been changed in the particular time of the preceding seven years. In 1996, however, the number of stock markets

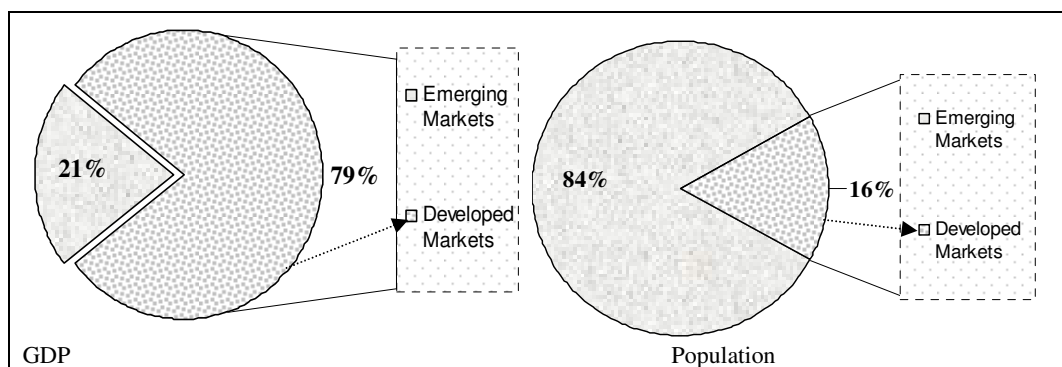
throughout the developing countries continued to rise to constitute almost 60 *per cent* of the entire world stock markets with a total capitalisation of about 1.9 trillion US\$. It is suggested that, in these countries, liquidity has increased even faster and turnover leapt from 26 to 85 *per cent* of emerging market capitalisation between 1985 and 1999 (Levine, 2003). According to the International Finance Cooperation (IFC, 1997), all stock markets in developing countries are considered to be emerging economies as classified by the World Bank, which are either low- or middle-income economies (low- and middle-income is defined as those in 1995 with per-capita GDP of 9,385 US\$ or less) regardless of their particular level of development. By the end of 1999, among all economies with an annual income per-capita of less than 9,266 US\$ and with populations of greater than 30,000 people, 157 nations were designated as being less developed countries and 49 as being industrial nations (Füss, 2002). According to the Global Stock Market Fact-book (2007), Libya (in 2005) was classified as being in mecategory or developed economies with an upper- or higher- middle- income per-capita of 3,466 to 10,725 US\$ with populations of greater than 6 million people, were designated as being less developed countries. Table 5.1 and Figure 5.3 present a classification of developed and developing countries after income per-capita during 2005.

**Table 5.1 The Population and Income Per-capita Indicators of the World including Emerging Market Countries, 2005**

Income Category	No. of Economies	Population (millions)	GDP (billions US\$)	GDP Per-capita (US\$)
Low Income Countries (755 US\$ and Less)	54	2,352	1,377	585
Middle Income Countries (MIC)				
• Low Middle Income (876-3,465 US\$)	58	2,475	4,760	1,923
• High Middle Income (3,466-10,725 US\$)	40	600	3,379	5,634
High Income Countries (10,726 US\$ or more)	56	1,011	35,643	35,264
Emerging Markets	152	5,427	9,515	1,753
Developed Markets	56	1,011	35,643	35,264
World	208	6,438	45,135	7,011

Source: Standard and Poor's (2007).

**Figure 5.3 Distribution of World GDP and Population, 2005**



Source: Standard and Poor's (2007).

The growing number of empirical studies by Kirkpatrick (2005), with respect to emerging markets, tend to support the link between stock market development and economic growth. Levine and Zervos (1996), using data from 41 countries over the period 1976-1993, show that there is a positive correlation. In addition, King and Levine (1993a, b) show that there is a strong link between financial development and the economic growth rate in the long-term. Furthermore, it has been suggested that there is increased awareness of the relationship between the financial market, financial development and economic growth (Singh, 1996). Demmogrüc-Kunt (1995) found a positive correlation between stock market development and the development of financial intermediaries. In order to identify the effect of liberalisation on stock markets, Levine and Zervos (1998b) used data from 16 emerging markets. They examined the impact on liberalisation of restrictions on capital and an international flow on stock market development. They discovered that liberalised stock markets became larger, more internationally integrated, more liquid and more volatile. Table 5.2 shows that stock market liquidity increased significantly in 12 out of 14 countries following liberalisation controls in international capital flows, which can assist economic growth to increase more rapidly by encouraging stock market liquidity. Table 5.2 further indicates that stock market volatility increased in 7 out of 11 countries without significant decrease in any of the 11 nations following liberalisation, where it would be easy for international capital flow restrictions to increase liquidity and volatility.

**Table 5.2 Stock Market Performance after Liberalisation in Emerging Markets**

Country	Year of Liberalisation	Size	Liquidity	Volatility
Argentina	1989	↑	↑	↑
Brazil	1983	—	—	↑
Chile	1988	—	↑	—
Colombia	1989-91	—	↑	↑
India	1990-91	↑	↑	↑
Jordan	1987	—	↑	—
Korea	1981-92	↑	↑	—
Malaysia	1986	—	—	n.a.
Pakistan	1990	↑	↑	↑
Philippines	1988	—	↑	—
Portugal	1988	—	↑	n.a.
Thailand	1988	—	↑	↑
Turkey	1990	↑	↑	n.a.
Venezuela	1988	—	↑	↑

Notice a: Arrows indicate increases; dashes indicate no significant change; n.a. indicates data unavailable.

Source: Levine (1996).

Consequently, the following two sections (5.6 and 5.7) are developed with reference to the Libyan context. Section 5.6 considers the stock market variables presented in the hypotheses testing in respect of the dependent variables, while section 5.7 introduces the banking system (independent) variables.

## **5.6 MEASURING STOCK MARKET VARIABLES**

The following variables are those suggested for measuring market (size, liquidity and activity), market efficiency and market volatility related to stock market performance. Since this study focuses on determining Libyan stock market performance after the implementation of the economic reform programme, the first three variables in this research will be tested as the Libyan stock market was founded very recently (see Chapters Seven and Eight). These variables are, therefore, of particular analytical interest.

### **5.6.1 Market Size**

The size of the stock market from the volume of capital and listed companies is determined, and can be measured, by the number of listed companies. The rationale behind this measure is that most of the stock market size is positively correlated with the ability to mobilize capital and diversify risk on the worldwide economy. Hartmann and Khambata (1993), Demirgüç-Kunt and Maksimovic (1998), and Subrahmanyam and Titman (1999) have calculated market size as an indicator for stock market development. It consists of two dimensions. Total market capitalisation is measured by the total value of listed shares on the stock exchange and the number of listed companies in the stock market can indicate to what extent that value is increased among the listed firms. In addition to these two dimensions, market capitalisation per GDP can be considered as an indicator of market size. Bekaert and Harvey (1995, 1997) determined that the ratio of equity capitalisation to GDP is a useful tool in characterising the time-series of market integration. Furthermore, Morck et al. (2000) and Wargler (2000) contend that larger market size relative to economic activity contains more informative prices which assist investors and managers to differentiate between sound and poor investments through more precise measures of stocks.

### **5.6.2 Market Liquidity**

Stock market liquidity is the ability to buy and sell securities easily. Greater stock market liquidity can encourage investors to obtain more information about firms which prefer to



change portfolios quickly and reasonably. Market liquidity is measured by the total value of shares traded on the stock market divided by GDP and the turnover ratio is the value of the total shares traded divided by market capitalisation. Furthermore, liquidity is a key characteristic of stock market development because more liquid stock markets theoretically improve the allocation of capital to their optimum use and influence investment in long-term growth. For instance, the critical issue of liquidity provision is stressed theoretically in Levine (1991) and empirically in Levine and Zervos (1998). Considerable research has focused on stock market liquidity size. Levine (1991), Bencivenga and Smith (1991), Bencivenga et al. (1995, 1996), Diamond (1996), Greenwood and Smith (1997), Fulghieri and Rovelli (1998) and others contest that stock market liquidity is necessary for economic growth. Levine (1997) suggests that stock market liquidity encourages, or at least strongly forecasts, corporate investment even though much of this is financed through reserved earnings and bank loans, rather than equity issues. Miller (1991) argues that greater liquidity has a direct impact on the effectiveness of the government function of the stock market which increases market activity to reaching information which, in turn, increases the content of share prices. Additionally, the effective use of the stock market for corporate control is required for the market to be liquid. Ahimud et al. (1997) and Henry (2000a, b) contest that increased stock market liquidity can also reduce the cost of equity capital via a reduction in the expected return that investors require when investing in equity to compensate them for associated risks i.e. risk premium.

### **5.6.3 Market Activity**

Stock market activity is determined by two factors: the value and volume of trade divided by GDP and the turnover ratio and number of transactions. The works of Levine (1991) and Bencivenga et al. (1995, 1996) claim that higher transaction costs are associated with lower value-traded ratios, which may affect saving rates through to economic growth rates. Using cross-country regressions during the period 1976-1993, Levine and Zervos (1998) argued that stock markets might improve growth through liquidity. They found that equity market activity was positively correlated with measures of real activity. Atje and Jovanovic (1993) adopted a similar approach for forty countries over the period 1980-1988. They discovered significant correlation between the value of stock market trading as a percentage of GDP and economic growth. Peterson and Fialkowski and Petersen (1994) and Dactar et al. (1998) further illustrated that the quoted spread is a poor proxy for actual transaction costs faced by investors and called for an alternative proxy such as turnover rate, which may perform a better job of

capturing an asset's liquidity. Brennan et al. (1998) and Chordia et al. (2001) found a negative and significant relationship between expected returns and the level of liquidity measured by trading volume and share turnover.

#### 5.6.4 Market Efficiency

A valuable addition to the literature in this subject is the definition of efficient financial markets introduced by Malkiel (2003: 60). He states that efficient financial markets are markets which do not allow investors to earn above-average returns and arbitrage opportunities without accepting above-average risk. Malkiel (2003) argues, that despite this, some anomalous behavior of stock prices can create portfolio trading opportunities which enable investors to earn extraordinary risk adjustment return. This means that stock markets are still efficient even if some interruption or impediments happen. Moreover, Malkiel (2003) criticizes some studies which find that, if the reaction for new information, or important news announcement, is only grasped over a period of time, stock prices will exhibit the positive serial correlation found by investors. He shows that the evidence of efficiency occurring systematically in the stock market is often rather thin (see Fama (1988) and Fama and French (1998)).

The weak form efficiency hypothesis has been tested by a number of authors, for example, Fama (1965) for USA; Dryden (1970) for UK; Solnik (1973) for eight European markets; Conrad and Juttner (1973) for Germany; Jennergren and Korsvold (1975) for Norway and Sweden; Laurance (1986) for Malaysia and Singapore; Aybar (1992) for Turkey, etc. These studies provide mixed results. Butler and Malaikah (1992) examine the behaviour of individual returns in two stock markets, Saudi Arabia and Kuwait, over the period 1985-1989. They used serial correlation and ran several tests to evaluate the weak form efficiency in these two stock markets. Their study tries to investigate the similarities and dissimilarities of these stocks, regarding exchange mechanisms and efficiency. They conclude that institutional factors contribute to operational inefficiency in the Saudi Arabia stock market. This inefficiency includes trading delay, illiquidity, market fragmentation and the absence of official markets. Similar results for Arab markets were provided by (Gandhi et al. (1980) and Al Ajami (1994)). In particular, Al Ajami (1994) investigated the efficiency of four Gulf states' markets. The countries studies were, Kuwait, Saudi Arabia, Oman and Bahrain. Using a serial correlation test and a runs test, Al Ajami concluded that *the finding of this study provides evidence to substantiate the claim that a small and thin stock market does not*

*conform to the efficient market hypothesis.* Even in the more developing markets the evidence does not strongly support the efficient market theory. Dryden (1970) studied the price changes of 15 stocks listed on the LSE, testing that the results of some statistical tests agree with the random walk model, despite the presence of small systematic changes *which suggests that perhaps there are some patterns present in share prices.*

### **5.6.5 Market Volatility**

An average of 12 months' records could guide and may even provide concrete ways to comprehend the issues involved. The literature review revealed that different authors focused empirical evidence upon stock market liberalisation and volatility. This includes the work of De Santis and Imrohoroglu (1997), Aggarwal et al. (1999), Huang and Yang (1999), Kim and Singal (2000), Kassimatis (2002), Bekaert and Harvey (2003a, 2003b) and Bekaert et al. (2005). Chou (1988) contends that, in 1974, high stock market volatility led to the crash of the US stock market which indicates the importance of classifying the sources of volatility. Therefore, stock market volatility can mirror changes in money supply and oil prices (Engle, 2004).

Koutoulas and Kryzanowski (1996) provided a detailed empirical analysis of the major determinants of stock market volatility and how these responded significantly to exchange rate volatility in Canada. Kearney (1998) obtained similar results for Ireland. Fang (2000) found a negative reduction effect in the stock market return process related to the Asian crisis in Taiwan. Various studies have found a lower volatility in developed markets than in emerging markets. For instance, Harvey and Ferson (1993, 1994) supply evidence that emerging markets have higher volatility than their industrial or developed counterparts. Also, Stone (1990), Divecha et al. (1992), Wilcox (1992) and Harvey (1994a, 1995a) document high volatility in emerging market nations. Low correlation between developed and emerging markets reduces volatilities in portfolios from these markets (Hassan et al., 2006).

## **5.7 THE MEASUREMENT OF FINANCIAL MATURITY**

Many of the previous literature studies focused on the relationship between the financial system environment and economic growth. Banks are involved in uplifting economic growth and, historically, play quite a balanced role within the markets. Similarly, economists focused upon banks. In this context, Schumpeter (1912) and Patrick (1966) highlighted the role of banks and argued that the services provided by the banking system are essential for

technological innovation and economic growth. They additionally indicated that banks provide assurances to companies so that the latter could conduct business across borders. Goldsmith (1969) and McKinnon (1973) discussed conceptual descriptions of how the financial system affects economic growth; it is simply that the financial systems provide the foundation where the GDP of respective companies/countries increases or decreases or even remains stable. Diamond (1984), Greenwood and Jovanovic (1990), King and Levine (1993a, b) and Arnold and Walz (2000) determined that better capital allocation and productivity growth are inter-related. Fama (1985) argued that banks are more competent at reducing informational asymmetries by collecting information, because bank borrowers are also depositors and deposit history provides background information appertaining to the quality of the borrower. Boyd and Prescott (1986) argue that the banking sector has an uncomplicated ability to obtain information and, thus, allocate resources. Stiglitz (1985) and Bhide (1993) defend the idea that banks are more efficient than equity markets. Levine (2004) argued that the exogenous module of both stock market development and bank development help predict economic growth using two similar methods (panel GMM and OLS) over the 1975-1998 period. Through their empirical result he found that if Mexico's *turnover ratio* had been 68 *per cent* (the average of an OECD country) instead of the actual 36 *per cent*, it would have grown 0.6 *per cent* points faster per year. Similarly, if *bank credit* had been 71 *per cent* at the average of OECD countries instead of the actual 16 *per cent*, then the exogenous components of both bank and stock market development would have a significant impact on economic growth rate. Levine and Zervos (1998a) established that stock development is healthy with economic growth and that the stock market provides different financial services from those provided by banks. Gerard and Demirgüç-Kunt (1997: 26) mention that “*banking systems and stock markets development are complementary, most likely because each produces and demands better information*”. In an important empirical study Levine (2002) argued that financial services provided by banks and markets are both critical to a country's economic development process. Furthermore, Beck and Levine (2000) provide evidence that industries which are heavy users of external finance grow faster in countries with higher overall rates of financial development; they then conclude that banks and markets might act as complements to one another in providing financial services and increasing economic development. Another challenge to finance and growth literature (Allen et al., 2005, 2007) comes in the form of individual country outlines. For instance, China is often mentioned as a counter example to the findings in finance and growth literature. Despite weaknesses in its formal banking system, China is one of the faster growing economies worldwide (Demirgüç-Kunt and Levine, 2008).

## 5.8 FINANCIAL CRISIS IN DEVELOPED AND EMERGING MARKETS

The discussion to this point has concentrated mainly on financial crises leading to major disruptions in financial markets<sup>23</sup>; a phenomenon which began in advanced economies and then spread to emerging markets and low-income countries. The four types of factor that lead to such crises are increases, such as interest rates, in uncertainty, asset market effects on balance sheets and bank panics (Mishkin and Eakins, 2003). Fama (1989), Roll (1989) and Javed and Ahmed (1999) presented a summary of the literature on the US stock market crash of 1987, and Kaminsky et al. (1997) reviewed the results of 25 selected studies pertaining to currency crises. Harris (1987) provides the index of stock market and Kleidon (1992) identified the limit between buying and selling for the behaviour of the S&P 500 index.

Mishkin and Eakins (2003) contend that crises are caused by an increase in adverse selection and moral hazard problems that prevent financial markets from channelling funds to people with productive investment opportunities, leading to a sharp contraction in economic activity. The stock market crash in October 1987 inspired national links between stock markets worldwide. In recent years, however, many emerging markets have encountered financial crises. In Latin America, for instance, the Mexican crisis began in December 1994, when stock prices on the Bolas stock exchange had fallen almost 20 *per cent* from their September 1994 peak. Commencing in February 1994, the financial crisis saw a rise in interest rates overseas. Among East Asia a crisis began in July 1997 in Thailand, Malaysia, Indonesia, Philippines and South Korea. As Higgott (1998: 349) argued: *“the Asian crisis is a contest of ideology between Asian and Anglo-American ways of organising capitalist production”*. In Thailand a foreign debt default in early February 1997 required over 8 billion US\$ of loans from the central bank to bolster the government. The financial markets of Thailand and South Korea both experienced declines in their securities’ markets. This increased uncertainty in the financial markets of both nations and substantial declines were experienced in their securities’ markets. As the IMF (1999: 17) indicate: *“the Asian crisis differed from previous financial crises in which the IMF’s assistance has been needed [...] Conventional fiscal imbalances were relatively small and only in Thailand were significant real exchange rate misalignments*

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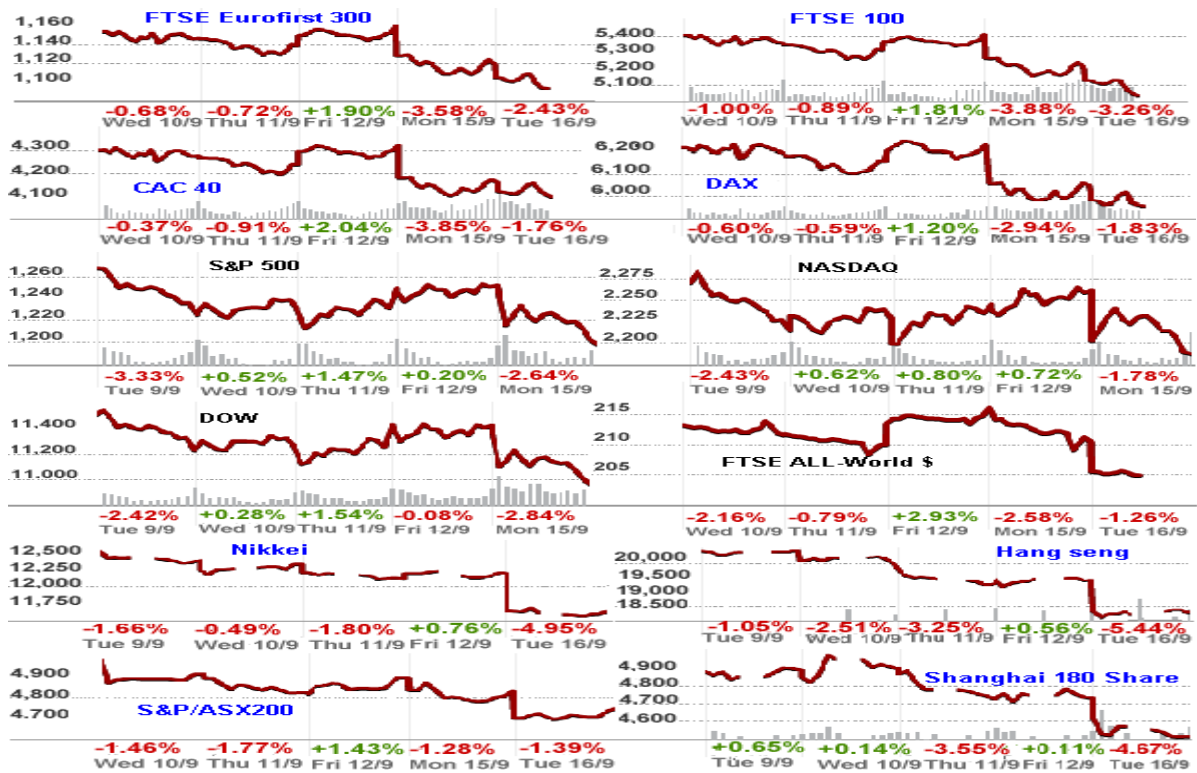
<sup>23</sup> According to the IMF (1998: 74-75), a currency crisis can be defined as a sudden devaluation of a currency by speculative attacks or a massive reduction of foreign currency reserves as a result of defending the value of a currency. A financial crisis is a disruption of financial markets which is often caused by actual or potential failures of financial institutions that compel the government to rescue them on a large scale. Whilst a financial crisis is occasionally accompanied by a currency crisis, the latter does not necessarily evolve into a financial crisis.

*evident*". Furthermore, the collapse of currencies led to a rise in actual and expected inflation in these countries. Market interest rates rose to dramatic levels (over 100 *per cent* in Mexico). As a result, the increase in interest payments caused cash flow reductions for households and companies, which led to further deterioration in their balance sheets. This negative shock was most severe in Indonesia, Thailand, the Philippines, Malaysia and South Korea where the value of the currency in their stock markets declined between 50 and 80 *per cent*; the Mexican market declined 50 *per cent* from its peak value. Consistent with the US experience in the nineteenth and early twentieth centuries, stock market declines and increases in uncertainty were additional factors precipitating the full-blown crises in Mexico, Thailand and South Korea. In 1994 the Mexican economy was hit by political shocks that created great uncertainty. Finally, in the aftermath of crisis, Mexico began to recover in 1996. The East Asian nations, on the other hand, were recovering by 1999. In all these countries the economic hardship caused by the financial crises was incredible. Unemployment rose sharply, poverty increased significantly and the social fabric was stretched thinly. Mexico City, for instance, became one of the most crime-ridden zones in the world, while Indonesia witnessed waves of violent ethnic conflict.

Lehman Brothers was the fourth-largest US investment bank and 158-year-old firm which had survived the railroad bankruptcies of the 1800s and the Great Depression of the 1930s. It filed for bankruptcy protection on 15 September 2008, becoming a victim of the global credit crunch. The company listed more than 613 billion US\$ (343 billions UK£) of debt and made this the biggest crises in US history dwarfing World Com's insolvency 6 years earlier (BBC News, 2008; Onaran and Scinta, 2008; Taylor, 2008). On the Friday, Lehman's was an investment-grade bank with 42 billion US\$ of liquid assets. By the following Monday it was bankrupt. The New York firm employed 25,000 people worldwide including 5,000 staff in Britain (Boden, 2008 and Wood, 2008). Andrew Goodwin, a senior economist at Oxford Economics states: "*There is a danger there could be more bad news in the next few weeks. We would tend to see an acceleration in job losses right about now*" (Master, 2008). Lehman shares dropped 92 *per cent* in New York to 29 *per cent* from their 3.65 US\$ close on 12 September 2008. UBS AG, HBOS plc and Axa Sale saw a decline of more than 3 *per cent* for European stock markets (Onaran and Scinta, 2008). Finally, equity markets in Europe and the US fell to their lowest levels since mid-July. By mid-afternoon the Pan European FTSE Eurofirst 300 index fell 3.6 *per cent* while, in New York, the S&P 500 was down 2.6 *per cent*.

Markets in Japan, Hong Kong, China and South Korea lost between 5 and 7 *per cent*, when they opened for business and fell sharply that were closed for holiday (see Figure 5.4).

**Figure 5.4 The World Equities Crisis in Europe, American and Asia Pacific in September 2008**



Source: Financial Times (2008).

However, the stock market on this particular Monday witnessed its worst day's trading decline since the 11 September 2001 terrorist attacks. European markets dropped by 3.5 *per cent*. Similarly, oil prices declined to less than 100 US\$ a barrel for the first time since March 2008 (Wood, 2008). The benchmark FTSE Eurofirst 300 fell by about 2 *per cent* to 1097.85, with its losses for the week amounting to 5.5 *per cent*. Also, the index had lost over 30 *per cent* since the beginning of 2008. Some analysts believe that the Lehman collapse could lead to a reorganisation of the entire US financial system which has been stuck in the economic depression since the mortgage crisis struck more than a year previously (Aljazeera, 2008).

As with other developing countries, Libya has also experienced a financial crisis, as mentioned in Chapters One and Two. This started during the late 1980s and early 1990s and originated with the reduction of oil prices and exports. It was, additionally, a time of political uncertainty, due to the US sanctions against the Libyan economy beginning in 1992. Recovery then required more than seven years. Early in 1980 the balance of trade had reached 4,483 million LD, falling to 1,925 million LD the following year. In mid-1986 oil prices collapsed; the price

of a barrel fell to less than 10 US\$ in sharp contrast to the average price of 27 US\$ in 1985. In fact, Libya experienced cash flow problems that impacted adversely on economic growth, when oil revenues plummeted from 22 billion US\$ in 1980 to 5 billion US\$ in 1986, whilst GDP also declined from 35,500 US\$ to 24,000 US\$ during the same period, and average GDP per-capita fell from 10,900 US\$ in 1980 to 6,404 US\$ (Altunisik, 1995). This was due to the decline in oil prices and export quantities from 23.3 billion US\$ to 5 billion US\$ in 1988. In this regard, Fisher (1990) concluded that, during the 1980s, the Libyan economy was heavily affected by the low price and quantity of oil exported, whereby GDP recorded a negative growth rate of around 13.6 *per cent* in 1987<sup>24</sup>. Mahamud and Russel (1999) point out that the trade ban and economic sanctions introduced by the US government against Libya during 1981 and 1986, respectively, froze all Libya's assets in America. Libyan exports subsequently decreased 1.6 million US\$ by 96.4 *per cent*. American imports of Libyan oil were blocked and there was a withdrawal of US companies based in the country, with their assets correspondingly frozen by the Libyan government. Furthermore, Mahamud and Russel (2002) explained that the US embargo and sanctions affected all infrastructure development programmes and plans. Resultingly, there was a decline in the production capacity of crude oil and the natural gas sector as almost all Libyan oil fields consist of ageing American-made equipment and operating companies were unable to obtain spare parts. Libya, however, began to search for other business markets and was able to compensate for this loss by exporting elsewhere via the National Oil Corporation (NOC). The Libyan mission to the UN reported in a letter the implication of Security Council resolutions 748 (1992) and 883 (1993) for Libya and quantified the cost of the sanctions as 33.602 billion US\$ from 15 April 1992 to 5 April 1999. This included 1.430 billion US\$ in the health sectors, 1.495 billion US\$ in agriculture, 6.610 billion US\$ in the livestock sector, 3.713 billion US\$ in transport and communications, 5.850 billion US\$ in mining and industry, 8.627 billion US\$ in trade and 5.877 billion US\$ in the energy sector.

As indicated by Fayad (2000), the decline in GDP growth rate meant that these mounting economic problems were attributed to various political factors: oil production; reducing imports; OPEC operations to control prices and oil export quantities; decreasing the number of

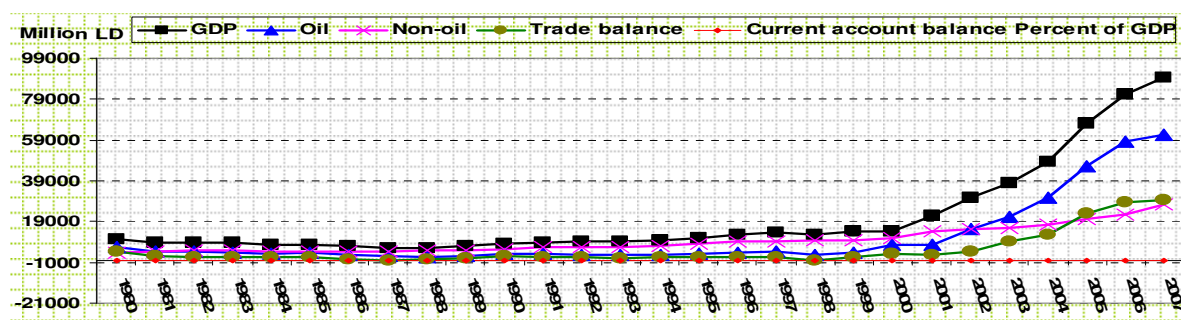
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<sup>24</sup> After the sharp decrease in oil prices in 1986, Qaddafi stated “Analysts believe that oil cannot be dispensed with and (oil prices) will not slump continuously. They will reach a certain level and they will start to rise again. [While], every family plans how to manage the situation. The important thing is we will not be hungry, thirsty, without clothing until the end of the oil problem, when the situation improves. It means it is possible, in a simple way, to overcome any crisis. No matter how much we lost in price drop, in my opinion the loss was only in terms of luxury and extravagant items we used to buy.” (Altunisik, 1996: 8).



foreign workers in Libya. Serious cash-flow problems and increased debt repayment difficulties resulted (Abuarroush, 1996). A decade later, during 1990, the balance of trade rose to 1,925.4 million LD due to the second Gulf war. With the collapse in the oil market during the 1990s, the trade surplus dropped to 766.3 million LD in 1993. Since the lifting of the UN and US trade sanctions against Libya in 2003 and 2004, respectively, an open-door economic policy and structural reforms began and a series of policy measures were undertaken through the government agenda of transition to enhance the role of the private ownership sector and reform programme of deregulation including liberalisation of the economy. The trade surplus again reached 9,208.7 and 29,402.2 million LD in 2003 and 2007, respectively. In 2000 GDP achieved a growth rate of 42.1 *per cent* or 7761.9 million LD to increase to 30848.4 million LD or 64.1 *per cent* in 2004, before reaching 69.3 *per cent* or 61834.2 million LD in 2007. This rise in the economic growth rate in 2000 is attributed to the growth in non-oil sectors by 57.9 *per cent*, which then dropped to 30.7 *per cent* in 2007 due to the oil price increases, while the oil grew by 69.3 *per cent* (see Appendix A, Table 3.12). Figure 5.5 illustrates that, during the 1980-2007 period, structural changes in Libya's GDP growth rate via economic activity resulted from fluctuations in supply and demand in international oil prices. Rodrik (1996) argues that the idea is tautological in the explanation: *"That reform should follow crisis, then, is no more surprising than smoke following fire"*. Bates and Krueger (1993: 454) point out that: *"[...], reforms have been undertaken in circumstances in which economic conditions were deteriorating. There is no recorded instance of the beginning of a reform programme at a time when economic growth was satisfactory and when the price level and balance of payment situations were stable"*. Related to this is the work by Sturzenegger and Tommasi (1998), wherein crises could be "useful" for welfare, if the indirect but beneficial effect of reducing delay outweighs the direct but adverse effect of the crisis.

Figure 5.5 Structural Changes in GDP by Economic Activity (1980-2007) <sup>a</sup>



Notice a: More data see (Appendix A, Table 3.12).

Source: General Planning Board, Economics and Social Indicators (1962-2000), IMF (2008) World Bank Outlook Database.

## **5.9 THE RELATIONSHIP BETWEEN ECONOMIC REFORM PROGRAMMES AND STOCK MARKET PERFORMANCE**

As mentioned previously in Chapter Three, any programme of macro-economic reform or, in other words, consolidating the economic reform, aims to target the rate of growth to improve society's living standards. To achieve this, and to increase the level of investment in terms of stock market performance in order to play a vital role in attracting both local and foreign investment, there should be a direct link between economic reform programmes and the performance of a stock market in order to transforming the economy from a socialist to market-based economy. The development of research technique by Granger (1986) and Engle and Granger (1987) has encouraged many studies on the short and long-term to scrutinise the relationship between economic variables and stock market performance. There are various economic aspects, such as those of economic reform variable deregulation and privatisation.

### **5.9.1 Relationship between Deregulation and Stock Market Performance**

Many previous studies have focused on the relationship between deregulation and stock market performance. Pardy (1992) highlighted the need for legal, institutional and regulatory changes in order to realise the necessary desired results of financial liberalisation in developing countries. Others, meanwhile, argue that there should be no regulatory discrimination for particular interest groups in an economy (Chuppe and Atkin, 1992). In this context, Claessens and Rhee (1994) performed an empirical study of significant decrease in the risk-adjusted cost of capital in developing countries, if foreign investors have encountered fewer restrictions in emerging markets. As recognised by Vitas (1992), investments in emerging markets have recently been of great interest to the worldwide investment community. Pratten (1993) described the alterations to the UK stock market since the 1920s and 1930s. These include institutional changes to the relative importance of categories of participants and market performance. The most significant changes were the relaxation of rules governing investment by trustees introduced by Trustee Investments Act of 1961 and the increase in the number of markets plus the reduction in transaction costs for large deals associated with the "*Big Bang*" transformations to the London market since 1986, where screen-based trading replaced trading on the floor of the stock exchange. Behind the regulatory changes and shifts in the pattern of ownership, there have been alterations in the role, importance and perception of the stock market. In Britain its role has been enhanced by an extensive programme of privatisation.

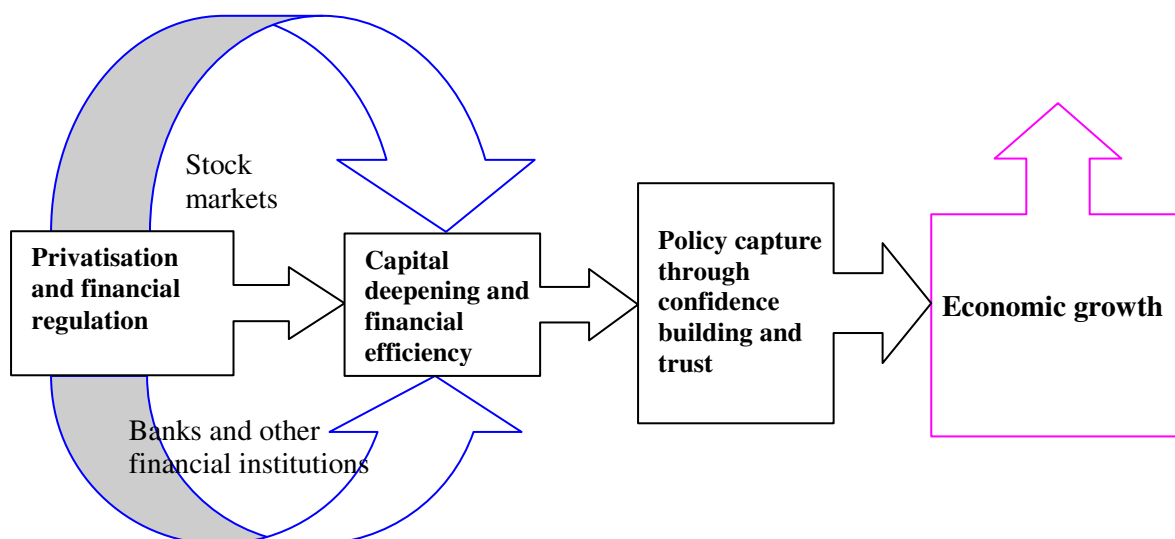
### 5.9.2 Relationship between Privatisation and Stock Market Performance

Privatisation became one of the primary policies adopted by the IMF and the World Bank as part of its economic reform and structural adjustment programme to remedy deteriorating economic conditions, especially in developing nations. They suggested the introduction of market-oriented policy reforms to deregulation, liberalisation, nationalisation, budget deficit and balance of trade, to cut public expenditure, reduce state intervention and trade controls, devalue currencies, public sector inefficiencies and privatise or liquidate public ownership enterprises. In developing countries, between the early 1980s and late 1990s, forms of privatisation were adopted; for instance, in Libya, India, South Korea, Thailand, Malaysia and the Philippines, within their its all-pervasive economic sectors or activities, including the sales of equity and of assets, electricity, management contracts, banking, insurance, water supply, oil and gas, telecommunications, airlines, hotels, food processing, tourism and corporatisation (Mohamed, 1995 and World Bank, 1995a). In Asia the number of privatisation transactions increased from 108 to 367 during the periods 1980-1987 and 1988-1993, from 136 to 561 in Latin America and from 210 to 254 in Africa (World Bank, 1995a). During the 1988-1993 period, in Asia, the total value of privatisation transactions was 19.7 billion US\$, in Africa 3.2 billion US\$ and in Latin America 55.1 billion US\$ (World Bank, 1995a). By the mid-1990s, Malaysia privatised about 357 projects, including numerous large companies in telecommunications and energy. In June 1993 the Philippines replaced 310 companies out of 419 non-performing assets and 78 out of 122 state ownership enterprises and similar programmes of privatisation were launched in Bangladesh and Pakistan (i.e. see Sader 1993, World Bank, 1994 and 1995a; Kelegama, 1995). The report of the Organisation for Economic Co-operation and Development (OECD) for 2000 stated that total revenues of privatisation in all nations had increased by 10 *per cent* during the previous 10 years, which equals 145 billion US\$. The largest sole operation was in Italy. This was worth 14 billion US\$, representing 34.5 *per cent* of the shares of the largest national public electric power company.

Figure 5.6 shows that, when privatisation and financial regulation increases, the deepening of the stock market contributes to the increase of the efficiency of the whole financial system. Thus, the efficient capital allocation with higher factor productivity will contribute to bring the country towards a faster economic growth rate. Bekart et al. (2002) argue that privatisation and regulatory reform programmes help create more efficient domestic capital markets which can channel savings to investment by private ownership and the liberalisation of their financial

market. The aforementioned authors suggest that economic reforms reduce government-funded systems by private social security which may result in an increase in private savings (Edwards, 1995).

**Figure 5.6 Conceptual Framework of Privatisation and Regulatory Reforms**



Source: Gentzoglanis (2007).

In theory, a privatisation programme requires a well-organised stock market, which can help to increase market capitalisation and market liquidity. Al-Robiai (2004) proposed that two kinds of private sector exist: the organised market system of accounts and the disorganised private sector. In Libya it had become evident by the late 1980s that the nationalisation of business had failed to improve the economy, and the government began to introduce a programme of privatisation. An extremely limited part of the public sector was privatised, including some small and medium-sized enterprises which were transferred to their existing employees. This research will pay greater attention to examine the impact of economic reform programmes on stock market performance as applied to the Libyan economy in terms of one of the world's emerging markets.

## **5.10 THE RELATIONSHIP BETWEEN MACRO-ECONOMIC REFORM AND STOCK MARKET PERFORMANCE**

Changes in macro-economic variables, such as interest rates, inflation rates, exchange rates, the budget deficit, per-capita income and rate of growth, affect stock returns and prices. This

part of the research allows for the natural arguments of macro-economic variables which should have a considerable impact upon stock market performance.

### 5.10.1 Relationship between Interest Rates and Stock Market Performance

Rates of interest must be positive to encourage society to save and to establish new businesses, because these directly affect everyday lives and bear a critical impact upon the health of the economy which accelerates the rate of growth. Interest rates determine personal decisions about whether to consume to save or to buy, and whether to purchase bonds or to deposit funds in savings accounts. They affect the economic decisions of businesses and households (Mishkin and Eakins, 2003). In the mid-1960s interest rates increased due to the liquidity effect being dominated by price-levels, income and expected-inflation effects. By the 1970s interest rates reached levels unprecedented in the post-World War II period. The liquidity effect indicates that a rise in money supply growth will lead to a decline in rates of interest. Despite this argument, the literature review in many financial studies examined alterations to the relationship between stock returns, interest rates, inflation and real activity (Fama, 1981 and 1990; James et al., 1985; Mandelker and Tandon, 1985; Asprem, 1989; Schwert, 1990; Lee, 1992; Canova and De Nicolo, 2000). For instance, Shiller and Beltratti (1992) found an indirect relationship between stock returns and interest rates. Meanwhile, others have considered the relationship between stock returns and macro-economic variables (Chen et al., 1986; Fama and French, 1989; Ferson and Harvey, 1991; Cheung and Ng, 1998; Bredin and Fountas, 2005).

Fry (1980) recognised a positive relationship between savings and the rate of interest for fourteen developing countries. Yusuf and Peters (1984) recognised this in South Korea, whilst Leite and Vaez-Zadeh (1986) do the same for six African countries and Ostry and Reinhart (1992) for 13 developing countries. Assorted results were obtained by Gupta (1987), Lahiri (1989) and Villagomez (1997). Other studies that have found a negative or insignificant relationship include Giovannini (1983, 1985), Oshikoya (1990) and Marwan and Ahmad (2005). Seppala (2000) classifies one of the oldest problems in economic theory as being the understanding of the “*term structure of interest rates*” (see e.g. Fama (1979, 1990) and other research by Asprem (1989) and Konan (2008) discover that there is a negative relationship between interest rates and stock returns in Korea. Abken (1993) and Blough (1994) provide literature surveys. Other studies, by Svensson (1994a, b), Fendel and Frenkel (2005) argue that monetary policy and the role of the “*term structure of interest rates*” as information in

financial resources alter motives. Ritter et al. (1997) presented a model of discounted cash flow to explain the relationship between interest rates and stock prices. Peavy (1990) discovered that there is a negative relationship between interest rates and stock prices. Additionally, Baye and Jansen (1995) note that there is an unchanging relationship between interest rates and stock prices.

From all the previous discussion in the empirical study, the relationship between interest rates and stock market performance was scrutinised to determine stock prices and returns. It is contended that changes in rates of interest do not affect all stocks to the same degree but, in general, the relationship between interest rates and stock prices is negative. This impact will be examined in the empirical part of this research (Chapter Eight).

### **5.10.2 Relationship between Inflation Rates and Stock Market Performance**

In an early empirical analysis, Fisher (1930) argued that the nominal interest rate is mainly related to the information available concerning possible future values of the inflation rate. This hypothesis featured the conclusion known as the “*Fisher effect*”, which holds that the nominal rates of interest on financial assets should move effortlessly one-to-one with expected inflation. Fama (1981) identified a negative relationship between inflation and economic activity, but a positive relationship between economic activity and stock prices; Benderly and Zwick (1985) supported these results. Other studies, by Fama (1976), Linke and Zumwalt (1980) and Sharpe (1999), have demonstrated a negative relationship between expected inflation and stock price returns. Various other studies have shown that there is a negative unexpected inflation effect in stock returns (Bae, 1991 and Flannery, 1994). Rapach (2002) also found a negative relationship between inflation and real stock prices; Shiller and Beltratti (1992) identified a small correlation between inflation and stock returns.

Using annual data from 1875 to 1970 and monthly data from January 1953 to December 1971 Jaffe and Mandelker (1976) demonstrated a positive and statistically insignificant relationship between returns on stock and inflation rate. Nelson (1976) and Boudoukh and Richardson (1993) investigated the relationship between the rate of inflation and returns on common stocks over the post-war period using the Fisher effect for stock market returns. It is a common empirical finding that stock returns and inflation rates have a mutually negative relationship. Cagan (1974), however, discovered a positive relationship between common stock returns and the inflation rate for several countries over the period 1939-1969. Boyd et al. (2001) highlighted the relationship between macro-economic measures via inflation rates and

financial market performance. They established that there is a statistically negative relationship between inflation and the stock market, wherein it is very evident that stock market development is not a completely exogenous determinate.

The economic reform programme that Libya has been implementing aims to tackle inflation. If this is high it will affect interest rates negatively. Libya has focused on maintaining inflation at a low rate in order to prevent it from having a negative impact upon interest rates. Significant measures which can be implemented include lifting limits on interest rates and eliminating lending limits to the private and public sectors (Handy and Subramanian, 1997). Accordingly, interest rates will depend on market forces, thus, the gap between nominal interest rates and inflation rates becomes narrower. Here, banks and other financial institutions are able to attract more savings and to invest these in numerous development projects. Low inflation and interest rates are sufficiently positive to attract both money supply and demand.

### **5.10.3 Relationship between Exchange Rates and Stock Market Performance**

Several interesting studies have investigated the relationship between stock market performance and exchange rates. Empirical studies by Dornbusch (1975) and Boyer (1977) suggested that changes between exchange rates and stock prices related to capital movements. Dimitrova (2005) argued that the relationship between stock prices and exchange rates is important for three reasons: firstly, it may affect decisions about monetary and fiscal policy; secondly, the link between the two markets may be used to predict exchange rate stability; thirdly, there is a link between currency rates and other assets in investment fund portfolios. According to Dornbusch and Fisher (1980), classical economic theory suggests the relationship between exchange rate behaviour and stock market performance as a “*flow oriented*” example for that model of exchange determination. Bahmani-Oskooee and Sohrabian (1992) investigated the relationship between stock prices and exchange rates in the US economy. They established that there is no relationship between these variables in the long-term. Ratner (1993) utilised monthly data from March 1973 to December 1989 to examine whether US dollar exchange rates affected US stock prices. His findings indicated that, in the long-term, there was no link between the US stock index and foreign exchange rates.

Kasman (2003) examined the relationship between stock prices and exchange rates in one emerging economy, the Turkish market. He discovered that there was a stable relationship

between stock prices and exchange rates in the long-term. The results additionally indicated that the causal relationship existed only from the exchange rate to industry sector index, which, in turn, affects currency. In general terms, an empirical finding suggests that there is no relationship between these three financial variables of exchange rates, stock prices and returns in most countries in long-term equilibrium via international investments or capital inflows and outflows. Many other studies have indicated that there is a statistically significant relationship in the short-term. The underlying reason for this may be found in the early empirical studies focusing on the short-term impact, where stock markets may take lengthy periods to respond to exchange rate modifications. Clearly, as detailed in the previous discussion, many studies have determined that these variables have some “*predictive ability*” for each other and the direction of causality seems to depend on the specific characteristics of the nation analysed.

#### **5.10.4 Relationship between Budget Deficits and Stock Market Performance**

Many theoretical and empirical studies have tested the link between monetary and fiscal policy and the nature of its impact on stock prices. On the whole, there are mixed results. In theoretical studies Tobin (1969), Blanchard (1981) and Shah (1984) contended that fiscal policy bears an impact upon stock prices. Certain other studies, such as those by Modigliani (1961) and Blinder and Solow (1973), have proposed that the level of government expenditure will raise interest rates and reduce private investment. Studies conducted by Dewald (1982), Dwyer (1982), Evans (1985) and Hoelscher (1986) claim that interest rates are unaffected by budget deficit size. For instance, Hoelscher (1986) investigated the relationship between budget deficit and long-term interest rates. Using annual data from 1953 to 1984, the study found a strong significant relationship between budget deficit and interest rates. Darrat (1988) investigated the fundamental effect of the relationship between the stock market and the budget deficit of quarterly data from the Canadian market covering the period 1960 to 1984, adopting a technique suggested by Granger (1980). He reached the found evidence that a significant government budget deficit is a determinant of stock prices.

In order to assess economic performance, rates of imports, exports, public spending, degree of privatisation and investment the overall budget should be considered. In cases of budget surplus or deficit this is a crucial index of the rate of growth. The Libyan economy solely depends upon the oil sector, whilst imports are diversified between all manner of consumer goods and technical equipment. This dependence has led to a budget deficit which is, and has been, a major weakness which the Libyan government has had to tackle. A reduction in the



overall budget deficit could be achieved either by increasing revenues or by reducing expenditure. Direct methods would include privatisation to reduce public spending, imposing taxes on international trade and raising exchange rates.

#### **5.10.5 Relationship between Per-capita Income and Stock Market Performance**

A number of theoretical studies have begun to show links between financial markets and rates of economic growth and it is proposed that higher per-capita incomes may affect many aspects of the economy and stock market performance. Gurley and Shaw (1955, 1960 and 1967) argued that financial development is a positive function of real income and wealth. This study supports the quantitative work of Goldsmith (1969), who discovered that, in most of the 35 developed and developing countries investigated, the ratio of the market size to GDP tends to increase with higher real income and wealth. This relationship between growth and the size of the stock market is further supported by more recent evidence from the World Bank (1989). Much of the empirical research shows that finance is strongly associated with the economic growth rate. In addition, it can be contested that there is a positive relationship between per-capita income and stock market performance; this relationship is examined within this research.

#### **5.10.6 Relationship between GDP Growth Rate and Stock Market Performance**

As mentioned in Chapter Four, the theory of finance shows that a high rate of growth in output affects the average real rate of capital return. It also encourages capital expenditure, as high capital expenditure will boost stock markets. Empirical studies by authors such as Carroll and Weil (1993), Weil (1993) and Edwards (1995) have traced a positive relationship between savings and economic growth. De Long and Summers (1991, 1993) utilised cross-country regressions for eighty-eight countries over the period 1960-1985. They discovered evidence of a significant relationship between high levels of physical investment and high levels of GDP growth per-works. A number of subsequent studies have adopted the growth regression framework related to stock market performance (see for example, Dowrick, 1992; King and Levine, 1993a; Atje and Jovanovic, 1993; Levine and Zervos, 1995, 1996 and 1998; Harris, 1997; Levine et al., 2000). Levine and Zervose (1995) used cross-country regressions for 49 countries and identified a significant correlation between GDP growth rate and stock market development. Using data from 40 countries and a simple cross-country regression, Ajie and Jovanovic (1993) discovered a significant relationship between growth rates over the period 1980-1988 and the value of stock market trading divided by GDP.

## 5.11 SUMMARY AND CONCLUSION

This chapter has considered theoretical perspectives on the importance of well-functioning stock markets for economic growth, since the study examines the effect of both stock market development and economic reform on economic growth. It has identified and discussed the main functions of the stock market within the economy. Additionally, it has analysed trends and quantitative measures of financial development in general and stock markets in particular, including the market size as measured by market capitalisation, market activity by value traded, and turnover ratio for stock market liquidity. The global financial crisis that started in advanced economies spreading to emerging markets and low-income countries has been reviewed, as have various empirical studies which have examined the relationship between economic indicators and stock market indicators. This empirical study proposed that an economic reform programme, in terms of deregulation, privatisation and liberalisation, has a positive significant effect upon stock market performance which increases market size, market liquidity, market activity and market concentration. Additionally, empirical studies illustrate that there is a positive relationship between macro-economics in connection to per-capita income and GDP growth and stock market performance with impact of changes in exchange rates on stock prices and returns which differ from one economy to another and from one industrial economy to another. However, the empirical studies revealed that there is a negative relationship between other macro-economics reform *vis a vis* interest rates, inflation rates and budget deficit on stock market performances related to stock prices and returns.

In Chapters Three, Four and Five a theoretical foundation upon which the research is based has been provided. The research objectives have also been identified. In order to collect the data required to answer the research objectives, an appropriate methodology needs to be developed, consequently, the overall research process, from its theoretical underpinnings to the collection and analysis of the data, is discussed in the next chapter.

## **CHAPTER SIX**

### **RESEARCH METHODOLOGY**

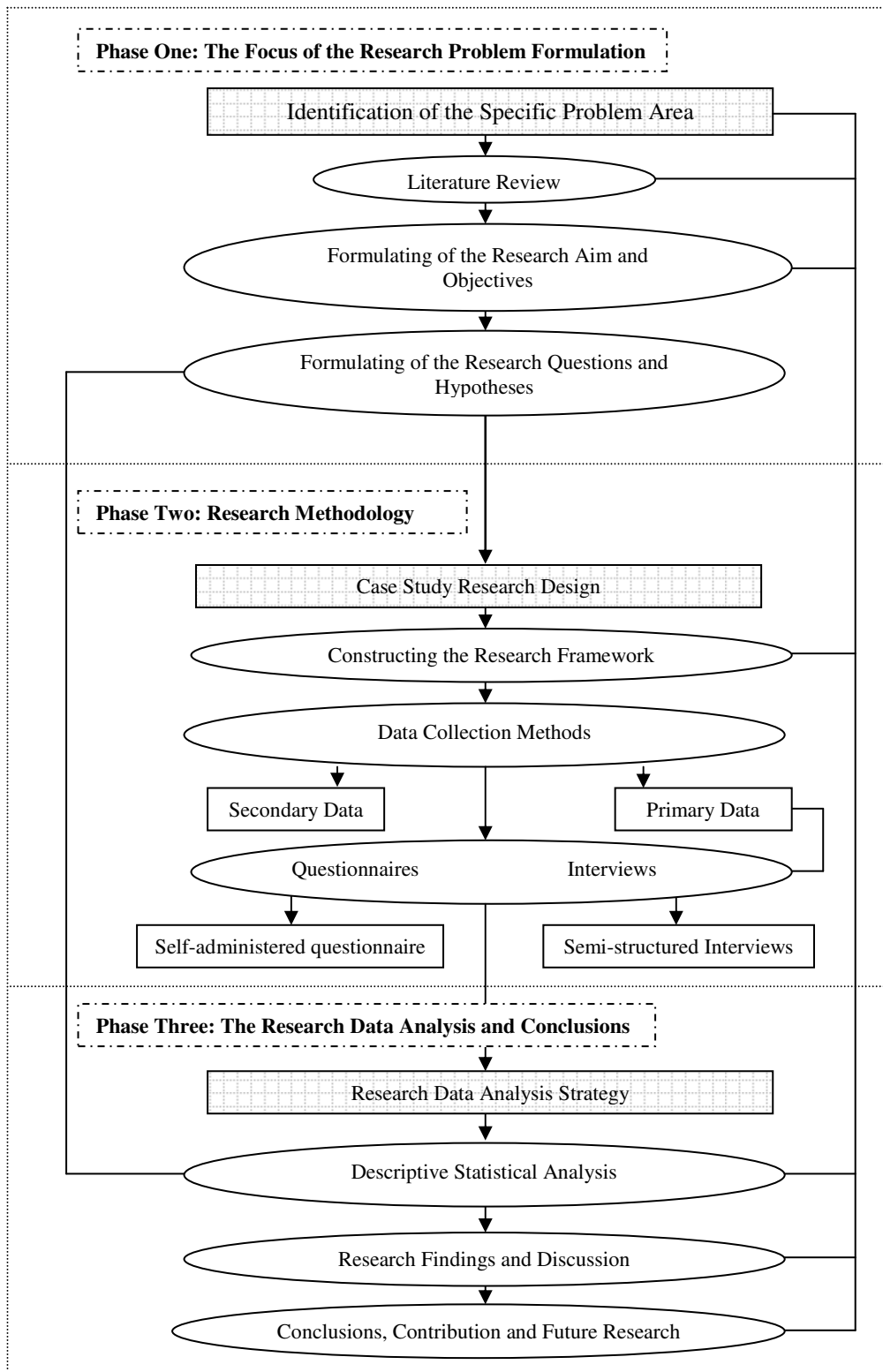
#### **6.1 INTRODUCTION**

The discussion in Chapter Two highlights the major changes in the Libyan economy since the independence of the country in 1951, providing evidence that, since the late 1980s and early 1990s, this economy has been subjected to a considerable shift from a centrally planned to a market economy system. Moreover, the survey of the literature in Chapters Three, Four and Five have provided an in-depth theoretical background relevant to the research problem, thereby offering a general overview of the literature and assisting in providing a framework for the theoretical and empirical study. With this knowledge, and an appreciation of the results from previous research studies pertinent to the general problem, an appropriate research methodology and procedure to investigate the problem of this thesis has been formulated. The aim of this chapter is to explain and justify the methods used in this study of economic reform and stock market performance in Libya, from which it will be possible to generate empirical evidence and assess the volatility and reliability of findings. Figure 6.1 illustrates the research design whilst Appendix B (Figures 1 and 2) shows a more detailed conceptual framework of the research.

The research philosophy and design applied in this research was a multi-method/mixed triangulation approach, since both quantitative and qualitative approaches are combined. The logic behind this is that it will allow more general conclusions to be drawn. Quantitative data was acquired through a questionnaire and qualitative data was acquired through semi-structured interviews. This approach would find favour with authors such as: Gacadamer (1976); Howe (1985); Cohen (1992); Gresswell (2003); Leedy and Omrod (2005); Miles and Huberman (1994); Remenyi et al. (1998); King (2004); King (2006) and Saunders et al. (2007). This multi-method approach provides the level of detail needed to both explore the economic reform programme and stock market performance and allow a judgement to be made on whether it assists in developing Libyan stock market performance. With regard to ethical issues, many respondents were concerned about matters of confidentiality and anonymity. It was made very clear to all interviewees that any names and places would remain totally confidential and anonymous and would be omitted from any published data. It is for this reason that the researcher guaranteed respondent confidentiality, which was a promise that the respondent would not be identified or presented in an identifiable form and anonymity

which is a promise that even the researcher will not be able to tell which responses came from which respondent (Robson, 2002).

**Figure 6.1 Major Steps Influencing Research Design and Process**



Source: Developed for this Research.

The chapter commences with Section 6.2, which highlights the research aim and objectives. This is succeeded by a brief case study justification adopted in Section 6.3. Section 6.4 offers an overview of the process of choosing an appropriate research philosophy. This consideration is followed by a detailed justification for the chosen research philosophy in Section 6.5. Section 6.6 presents the research framework. Section 6.7 discusses the research design-survey strategies. Section 6.8 presents methods of data collection. Section 6.9 focuses upon the validity and reliability evaluation. Section 6.10 focuses on the data analysis statistics. Finally, in Section 6.11, a summary and conclusion of this chapter is provided.

## 6.2 RESEARCH AIM AND OBJECTIVES

Methodology refers to *“how research should be undertaken, including the theoretical and philosophical assumptions upon which research is based and the implications of these for the method or methods adopted”* (Saunders et al., 2007: 481). It is concerned with the overall research process, from the theoretical underpinning to the collection and analysis of the data (Collis and Hussey, 2003). Therefore, researchers should be careful when they choose the methodology which must be appropriate for the researcher’s objectives and able to answer the relevant research questions. Consequently, in order to choose an appropriate methodology, the research aim and objectives should be identified. The main aim of conducting this research is to determine the most appropriate model for the continued viability of a stock market mechanism in Libya and to consider an appropriate strategy for the Central Bank of Libya to undertake successful continuation of the stock market development. To achieve this, the following research objectives were formulated.

**Objective One:** To assess the success of the economic reform programme in Libya, specifically the deregulation, corporatisation, privatisation and liberalisation that has led to initiation of the Libyan stock exchange.

**Objective Two:** To identify the benefits of a stock market to the Libyan economy. This involves examining the relationship between macro-economic reform variables and stock market performance variables.

**Objective Three:** To assess the performance of market-based economies, with particular reference to the emerging economy of Libya, and to evaluate current and best practice in financial deregulation.

**Objective Four:** To determine whether best practice from other emerging stock markets is transferable to the Libyan situation and context.

### 6.3 CASE STUDY AND JUSTIFICATIONS FOR ITS USE

In respect of case study research, Yin (1989: 23) defines this method as “*an empirical inquiry that investigates a contemporary situation within its real-life context when boundaries between phenomenon and context are not clearly evident and in which multiple sources of evidence are used*”. As such, combining the questionnaire survey and the case study approaches may help to better understand the economic reform programme and stock market development in Libya. Furthermore, Yin (1994) argues that the ability of surveys to investigate the context is extremely limited, which can be compensated for using the case study method. In contrast, the case study methodology is often criticised for relying on a single case, making it incapable of providing a general conclusion (Tellis, 1997). The latter incorporates description, illustration and explanation as it thoroughly investigates the past and present situation regarding the economic development in order to expand what can be learned in the period of time available for the study (Tellis, 1997). To achieve the research aim and objectives herein, the overall approach will be that of a case study focusing on the Libyan economic reform programme and stock market performance. This is in order to develop the research framework which is used to analyse and interpret the data collected from a quantitative approach and to investigate the relationships between economic reform factors and stock market performance factors. As mentioned in Chapters One and Two, the main factors of the Libyan economic reform programme and stock market performance include: oil sector dependency as a major source of income and foreign exchange earnings; limited stock market data; the freezing of UN sanctions in 1992. Since then, Libya has been gradually implementing measures to reform and open its economy. But, it is only following the lifting of UN sanctions in 1999 and all US Libya-specific trade sanctions in September 2003 and 2004, respectively, that the pace of reform has accelerated somewhat, with the implementation of measures aimed at enhancing the role of the liberalisation stability and private sector in the economy.

To reach objective four it was necessary to review studies of stock market determinates in emerging developing countries (see Subsection 6.6.3) to determine the issues used to explain financing behaviour and to ascertain which of these have an impact upon an economic reform programme and stock market as major factors in economic growth rate. As indicated by researchers (Michaelas, 1998 and Creswell, 2003), the mixture of different methods of data collection and analysis in stock market studies provides a “*triangulation*” approach, as outlined in Section 6.4. Cresswell (2003) argues that a rich research context requires more than one data collection method; the present approach satisfies that requirement since it

includes quantitative data from questionnaires and interviews as well as introduction on 42 emerging economies for comparison to Libya. Therefore, this approach was adopted as this study's major method because it has the potential to guarantee collection of sufficient information to allow the study's aim and objectives to be achieved.

#### 6.4 RESEARCH PHILOSOPHY

Research philosophy refers to the procedural framework within which the chosen methodology (e.g. case study, survey, experiment and grounded theory) is located. It is the particular paradigm (e.g. the view or approach) that a researcher adheres to, when conducting his or her study (Easterby-Smith et al., 2002; Cresswell, 2003; Leedy and Omrod, 2005). The two paradigms that dominate social sciences literature in general, and business management in particular, are 'positivism' and 'phenomenology' (Hussey and Hussey, 2003), and each derives from the way the researcher considers the development of knowledge (Saunders et al., 2007). It is necessary to take a philosophical position when deciding on what approach to adopt in research because, as Easterby-Smith et al. (2002: 27) point out: *"There are at least three reasons why an understanding of philosophical issues is very useful. First, because it can help to clarify research designs. Second, knowledge of philosophy can help the researcher to recognise which designs will work and which will not [...]. Third, knowledge of philosophy can help the researcher identify, and even create, designs that may be outside his or her past experience"*.

**Table 6.1 Difference between Positivist and Phenomenological Philosophies**

Positivist (Quantitative) Paradigm	Phenomenological (Qualitative) Paradigm
<i>Basic Beliefs</i>	
<ul style="list-style-type: none"> <li>• The world is external and objective</li> <li>• Observer is independent</li> </ul>	<ul style="list-style-type: none"> <li>• The world is socially constructed and subjective</li> <li>• Observer is part of what is observed</li> </ul>
<i>Researcher Should</i>	
<ul style="list-style-type: none"> <li>• Focus on facts</li> <li>• Look for causality</li> <li>• Reduce phenomena to simplest elements</li> <li>• Formulate hypotheses then test them</li> </ul>	<ul style="list-style-type: none"> <li>• Focus on meanings</li> <li>• Try to understand what is happening</li> <li>• Look at the totality of each situation</li> <li>• Develop ideas through inducting from data</li> </ul>
<i>Preferred Methods Include</i>	
<ul style="list-style-type: none"> <li>• Operationalising concepts so they can be measured</li> <li>• Taking large samples</li> <li>• The location is artificial</li> <li>• Reliability is high</li> <li>• Validity is low</li> <li>• Generalises from sample to population</li> </ul>	<ul style="list-style-type: none"> <li>• Using multiple methods to establish different views of phenomena</li> <li>• Investigating samples in-depth or over time</li> <li>• The location is natural</li> <li>• Reliability is low</li> <li>• Validity is high</li> <li>• Generalises from one setting to another</li> </ul>

Source: Gaber (1993); Easterby-Smith et al. (2002); Hussey and Hussey (2003).

As Table 6.1 demonstrates, the positivistic paradigm seeks to develop a theory and hypothesis (or hypotheses) about the relationship between two or more variables to be measured

quantitatively from available data, which is then tested empirically by analysing data concerning the relevant variables, using statistical tests to identify significant results. Findings confirm the theory or relationship between variables in the modification of the theory (Hussey and Hussey, 2003; Saunders et al., 2007). In investigating a phenomenon, the positivist approach takes an ontological assumption of 'reality' as being external and objective (Easterby-Smith et al., 2002). It assumes that a given phenomenon will happen regardless of who is observing and interpreting it. Hussey and Hussey (2003) explain that positivism relies on the belief that the study of human behaviour should be conducted in the same manner as studies undertaken in natural sciences, to establish cause and effect links between variables. On the other hand, the phenomenological paradigm is characterised by a focus on meanings that research subjects attach to social phenomena. It does not consider 'reality' as objective, but rather as being socially-constructed, with its meaning supplied by those involved. Phenomenological researchers attempt to understand what is happening and why. This involves focusing on the way (why and how) people view different experiences, rather than searching for external causes and fundamental laws to explain their behaviour (Leedy and Ormrod, 2005).

## 6.5 JUSTIFICATION FOR THE RESEARCH PHILOSOPHY

The choice of research methodology in social research has become a debated and problematic issue because it depends on the research questions, objectives and research philosophy; neither approach is appropriate or inappropriate in itself until it is applied to a specific problem. However, the positivistic paradigm is the most commonly-adopted philosophy in business research, as noted by Hussey and Hussey (2003: 73): *"It can be argued that the dominant paradigm in business research is the positivistic paradigm. If this is acceptable in your discipline, and to your supervisor, you will not need to expend much energy in justifying the methodology you adopt for your research. If you decide on a phenomenological approach, you may have to spend more time expanding and justifying your methodology."* The justification of the research philosophy lies in the following issues.

- a. It is the most appropriate when considering the nature of the research questions and objectives (Punch, 2005).
- b. It is a design and approach that has been used by other Arab researchers who have made progress through various studies in contributing to the literature related to business and management in Arab cultures (e.g. Abdalla and Al-Homoud, 1995; Agnaia, 1996;



Albahussain, 2000; Al-Athem, 2000). These researchers found that a multi-method approach combining questionnaires and interviews are the most popular and acceptable research methods in Arab environments. Since this research was conducted in Libya, application of the same research design employed by other Arab researchers strengthens the study's consistency, validity and reliability.

- c. Time available to the researcher is a determining factor, because the deductive approach can be quicker and a lower-risk strategy than the inductive approach (Creswell, 2003).
- d. The nature of the research questions and objectives is such that many subjective variables are involved which need to be investigated and measured by both quantitative and qualitative measures. Statistical analysis of quantitative data collected will allow for comparisons and generalisations to be relative and accurate, while qualitative data will provide a forum for elaboration, explanation and description of events, actions, attitudes, and behaviour of the subjects being investigated (Bryman, 1993).
- e. Analysts of financial structure models should incorporate strategic management preference, decision sciences and social psychology to a conceptual model to achieve a better understanding of capital structure policy (Matthews et al., 1994; Barton and Gordon, 1987). In this context, Rajan and Zingales (1996) suggest that future research should proceed in different ways: continuing to develop the relationship between both theoretical model and empirical findings by using models in diverse positions.
- f. The combination of questionnaire survey and technical models can provide a significant contribution to clarify and comprehend the economic reform in terms of stock market performance in emerging countries. Collection and empirical analysis in this research adopted a survey questionnaire and a regression analysis model for a systematic comparison of other emerging economies.

## **6.6 RESEARCH FRAMEWORK**

The aim of this section is to develop the research framework theoretically and empirically and, thus, investigate relationships between economic reform factors and stock market performance factors. This framework is designed to test research hypotheses to achieve the research objectives. It is largely based upon key findings from a literature review of an economic reform programme, a macro-economic reform (Chapter Three), economic and financial structure theory (Chapter Four), emerging stock markets (Chapter Five). Therefore, this study applies quantitative and qualitative approaches for the purpose of gaining a more comprehensive picture of the issues in question. It is valuable for the researcher to employ

multiple methods for primary data collection since this provides for more scientific rigour and allows for the first three research objectives to be pursued effectively. The quantitative approach was adopted in order to examine the hypotheses by utilising data extracted from survey questionnaires that were forwarded to Libyan financial institutions and companies in order to test these hypotheses using the liner regression model (Chapter Eight). In this regard, due to the fact that the economic reform programme and financial market in Libya requires a body of empirical knowledge, this stage attempts to further that knowledge by providing a comparison with emerging market countries in order to put the Libyan financial market into perspective. The empirical analysis in this study uses a systematic combination of regression analysis models and econometric techniques. Consequently, the fourth objective was formulated in the context of data, obtained from Datastream, on 42 emerging markets and were utilised in an attempt to analyse and, where possible, to understand and explain the financing behaviour of the Libyan financial market and to analyse the differences, if any, of financing patterns between Libya and the other 42 emerging market countries (Chapter Nine). This was done in order to test the fourth hypothesis using the econometrics model. The quantitative approach is described as an extensive approach, which employs less detail and more generality; it is believed that the quantitative approach is an appropriate methodology to link the models applied in this research area.

Four hypotheses have been formulated based on the research framework to be tested (see Figures 6.3 and 6.4 below). The primary sources of building or designing the research framework were undertaken.

- The theoretical review of literature on the research topics which provided a theoretical background of research factors or variables. This network of relationships is known as a theoretical framework (Sakaran, 2003).

The extracted variables in this study, as depicted in Figure 6.3, and tested in Chapter Eight are:

- Dependent variable: stock market performance;
- Independent variables: economic reform programme, macro-economic and financial maturity.

### **6.6.1 Building the Research Framework**

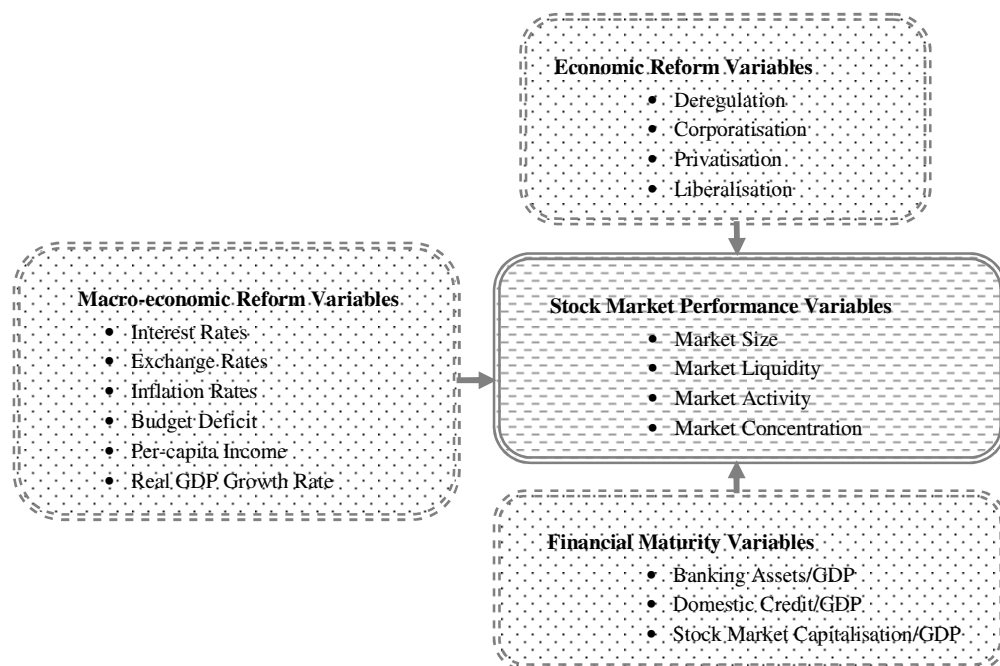
Building the research framework is concerned with detailed clarification of literature review arguments and justifications that are used to construct it. These arguments and justifications are major findings that represent a research framework based on the following research factors.

- The first part consists of economic reform programme factors including deregulation, corporatisation, privatisation and liberalisation. Theoretical studies in terms of these factors or variables were investigated by several researchers (e.g. Fisher and Gelp, 1991; Clague and Rausserc, 1993; Laban and Sturzenegger, 1994; Lissowska and Swaan, 1996; Easterly and Bruno, 1996; Fisher et al., 1996; Stulz, 1997; Kim and Singal, 2000; Williamson, 2004; Gwarnt and Lawson, 2005). Empirical work has determined the importance of the economic reform programme has options to alter the transformation of any economy from one that is closed or socialist to one which is an open-door policy or capitalist economy ( see, Cho, 1986; Zingales, 1998; Demirgüç-Kunt et al., 2004; Baltagi et al., 2006).
- The second part is concerned with macro-economic reform factors. These include six components (interest rates, exchange rates, inflation, budget deficit, per-capita income and real GDP growth rate). The review of empirical studies revealed that macro-economic factors differ from one economy to another (De Melo et al., 1997; Krueger and Ciolko, 1998; Lavigne, 1999). Other studies have further results (e.g. Wolf, 1997; Berg et al., 1999; Fisher and Sahay, 2000; Kasman, 2003; Omran, 2004; Bolbol and Omran, 2005).
- The third part relates to financial maturity factors. These are concerned with testing bank-based aspects such as banking assets, domestic credit and stock market capitalisation divided by GDP. It is a simple matter that financial systems provide a foundation where GDP of respective companies/countries increases or decreases or even remains stable. Levine (1997), Beck et al. (1999b) and Levine et al. (2000) used the ratio of total bank assets to GDP which are relative to the economy size and value of credit provided by banking sector to private sector divided by GDP. Whilst some authors stress the significant relationship between banks and stock markets (Stiglitz, 1985; Boyd and Prescott, 1986; Bhide, 1993), other empirical studies consider the impact of banks and stock market development on economic growth. These include Atje and Jovanovic (1993), Jappelli and Pagano (1994), Harris (1997), Levine (1997), Levine and Zervos (1998), Boyd and Smith (1998), Huybens and Smith (1999), Rousseau and Wachtel (2000), Demirgüç-Kunt and Levine (2001), Levine (2001), Bekaert et al. (2002), Beck and Levine (2002). Dow and Gorton (1979), Stiglitz (1989), Collier and Maryer (1989) and Cobham (1995) who argued from a contrasting perspective and supported banks rather than stock markets, particularly with regard to the situation in developing countries.

- The fourth part concerns stock market performance factors. These include market activity, size, liquidity and concentration. Following early research by Robinson (1952), Gurley and Shaw (1955), Fisher (1933), Goldsmith (1969), McKinnon (1973) and Shaw (1973) discovered development of financial markets has been significantly correlated within the level of rate of economic growth. Several theoretical and empirical studies by Greenwood and Jovanovic (1990), Berthelemy and Varoudakis (1996), Levine (1991), Kunt (1992), Atje and Jovanovic (1993), Levine and Zervos (1995), Kunt and Levine (1996) Harris (1997), Bossone (2000) and Currie (2003), among others, have contributed to the realisation that stock market development affects economic growth in a developing nation. For instance, Greenwood and Smith (1997) demonstrate that large capitalised stock markets can facilitate investments in the most productive technology projects by lowering the cost of mobilising and savings. Similarly, Levine (1991), Bencivenga and Smith (1991), Diamond (1996) and Fulghieri and Rovelli (1998) supported the notion that stock markets produce economic growth and further maintained that stock market liquidity is critical for such growth to occur.

Figure 6.2 illustrates the research's theoretical framework developed to test the relationships between economic reform programme, macro-economic reform, financial maturity and stock market performance factors.

**Figure 6.2 Conceptual Framework for the Impact of Stock Market Performance**

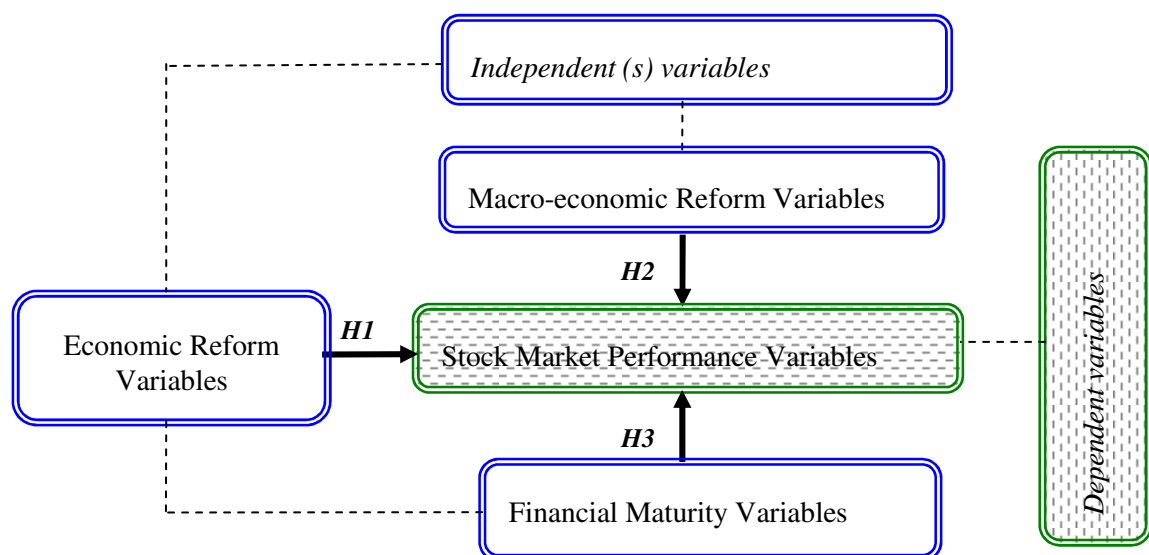


Source: Developed for this research Subsection 6.6.1: Building the Research Framework.

### 6.6.2 The Primary Research Model

This section provides a conceptual framework of this research based on a linear regression model to test the first three of the research objectives (Section 6.2 and Chapter Eight: Figure 8.2), which can be used for identification and integration to represent potential factors of macro-economic reform, which are treated as independent variables when measuring their effect on stock market performance. The factors of stock market performance, in turn, are treated as dependent. Performance factors of a stock market, therefore, depend heavily on the success of the economic reform programme's factors. When stock market factors experience a significant increase, stock market performance becomes more effective. As has already been shown, a well-performing stock market sustains developing economic growth (see Subsection 6.6.1). The factors of financial maturity act independently by linking to each other. These are considered to be stock market performance. Banks and corporate financing were considered as decision-makers for understanding the relationship between bank and market-based systems. Figure 6.3 displays the research model for the impact of stock market performance over an economic reform programme, macro-economic and financial maturity. This model is adopted to develop a framework that can test factors or variables of independent variables.

**Figure 6.3 The Primary Model for the Impact of Stock Market Performance**



Source: Developed for this research from Subsection 6.6.2: The Primary Research Model.

### 6.6.3 Background Statistical Technical Growth Model

This section provides a conceptual framework of the current research based on an econometric model in order to investigate the fourth research objective (Section 6.2 and

Chapter Nine: Figure 9.2) between emerging market economies<sup>25</sup> and the Libyan stock market to display diverse financing behaviour from that of other emerging markets included in the sample. Descriptive statistics are techniques to describe the sample distribution and enable a researcher to decide the appropriate analytical statistical method that may be used to demonstrate the extent of adoption of the growth model to indicate performance variables, such as original income level, population growth, education, investment levels, trade openness (exports and imports divided by GDP), political stability and economic freedoms, inflation rate, banking development indicators and stock market development indicators (see Chapter Nine). This totalled 42 emerging developing market countries: Algeria, Argentina, Bahrain, Bangladesh, Brazil, Bulgaria, Chile, China, Czech Republic, Egypt, Fiji, Hungary, India, Indonesia, Iran, Israel, Jordan, Kuwait, Lebanon, Malaysia, Mexico, Morocco, Nigeria, Oman, Pakistan, Philippines, Poland, Qatar, Romania, Russia, Saudi Arabia, South Africa, Sudan, Syria, Thailand, Tunisia, Turkey, United Arab Emirates, Venezuela, Yemen, Zimbabwe plus Libya. These nations were used to examine the financing model in place among these emerging developing nations (see Figure 6.4).

**Figure 6.4 Theoretical Model from other Emerging Markets**



Source: Developed for this research Subsection 6.6.3: Background Statistical Technical Model Cross-country Comparison.

Booth et al. (2001) explained that developing countries have many institutional similarities to developed countries (e.g. existence of financial market). In this context, it is crucial to study the stock market within the Libyan business environment. However, the Libyan economy differs from other emerging developing countries included in the sample, as its stock market is relatively new in this locus. Libya further differs in terms of economic reform, regulation ownership, companies and in terms of its macro-economic conditions which may differ significantly from other countries in terms of GDP growth rates, exchange rates, interest rates, inflation rates and in culture and corporate governance. Moreover, decline in oil prices had a vital impact upon the Libyan economy and its financing policy, affected by UN sanctions in

<sup>25</sup> Kim and Singal (2000) explained that emerging stock markets are defined by the International Finance Corporation as consisting of stock markets in developing countries (low-and middle-income economies).

the early 1990s<sup>26</sup> (see Appendix A for more details). Glen and Singh (2003) argue that comparison of financing patterns between countries is extremely valuable. They added that, as the economic reform programme in developing countries is on the national and international agenda, the comparison of financing patterns between countries might provide empirical guidelines to execute such economic reform programmes. Accordingly, the Libyan economic reform programme, in fact, requires a body of empirical knowledge which may pay greater attention to further that knowledge by providing a comparison with emerging market countries to achieve stock market performance to develop Libyan business behaviour. For that reason, this framework is used to analyse and interpret the data collected from these countries under investigation (see Chapter Nine).

#### **6.6.4 Background Quantitative and Qualitative Data Analysis**

The third philosophy is known as triangulation (other names: mixed and multi-method approach) between quantitative and qualitative based on triangulating methods of primary data collection. The use of multi-method (questionnaires and interviews) is based on the assumption that quantitative and qualitative methods are complementary rather than competitive (Saunders et al., 2007). Adcock et al. (1998) identified that the approach represents less than 25 *per cent* of research in marketing and more than 75 *per cent* of all marketing research data are provided as quantitative research. Based on the content analysis for research published in the five fields of social since during period of 1994-2003, Bryman (2006) found that 57.3 *per cent* of all articles published during that period employed a combination of a survey of instrument techniques and qualitative interviewing techniques. Another study by Mason (2006) indicated that, while the qualitative research techniques are able to answer the questions of “how and why” related to social phenomena, the analytical tools of quantitative research techniques are able to numerically demonstrate wide relationships of patterns and changes in social phenomena. This research has predominantly employed the quantitative approach by conducting a questionnaire survey, and less dominantly employed the qualitative approach by conducting a number of in-depth interviews as a second primary data collection (see Section 6.8). Even so, the preferred research approach according to Saunders et al. (2007) depends on the research subject, the time available to the researcher and audience favourites. The wealth of available literature assists researchers in developing

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<sup>26</sup> US sanctions were introduced in 1986, prohibiting US companies from any trade or financial dealings with Libya, while freezing Libyan assets in the US. UN sanctions were imposed in 1992, suspended in 1999 and finally lifted in 2003. US sanctions were lifted in 2004.

theoretical frameworks and hypotheses leading to the adoption of the deductive approach, whilst a new subject with little extant literature results in adopting the inductive approach.

The aforementioned authors found a multi-method approach combining questionnaire survey and semi-structured interview technique to be the most applicable and acceptable research methods within Arab organisations. This approach was adopted by other Arabic researchers who have conducted studies related to business research studying in disparate content areas (e.g. Al-Faleh, 1987; Abdalla and Al-Homoud, 1995; Agnaia, 1996; Albahussain, 2000; Al-Athem, 2000; Ahmad, 2006). Applying the same research techniques adopted by such research to identify all the problems and challenges that might face this research's objectives and current knowledge of the topic under investigation led to this research study adopting a mixed-method approach to research design and data collection activities. This combines both quantitative and qualitative methods, within the overall framework of a single case study (that of Libya) that depends upon collection of both primary and secondary data. However, within that design, a series of smaller case studies will be conducted on countries' progress since implementing stock exchanges, and of organisations in Libya, thereby providing a comprehensive data bundle. Based on this debate, the rationale behind choosing a multi-method approach to research is now given.

- The choice of multi-methods of data collection enables triangulation to take place (Leedy and Ormrod, 2005). Triangulation, as defined by Saunders et al. (2007), is *“the use of two or more independent sources of data or data collection methods within one study in order to help ensure that data are telling you what you think they are telling you”*. Such triangulation, as suggested by Creswell (2003), can achieve three advantages: it provides a kind of convergence of findings; it provides complementary between facts; it adds scope and breadth to a study.
- Different methods can be used for different purposes in a study (Hair et al., 2005) as a consequence; the choice of multi-method data collection follows directly from the research objectives which are also consistent with the research approach and strategy. Describing the stock market in the Libyan economy requires a questionnaire, while understanding practices requires flexible personal interviews with a limited number of respondents.
- Using of multi-method (questionnaires and interviews) in this research is due to the lack of availability of such high-quality databases published, which might constitute the major barrier to conducting a study of stock market performance within the Libyan economy. Data, then, gathered directly from the questionnaire survey responses to test the research

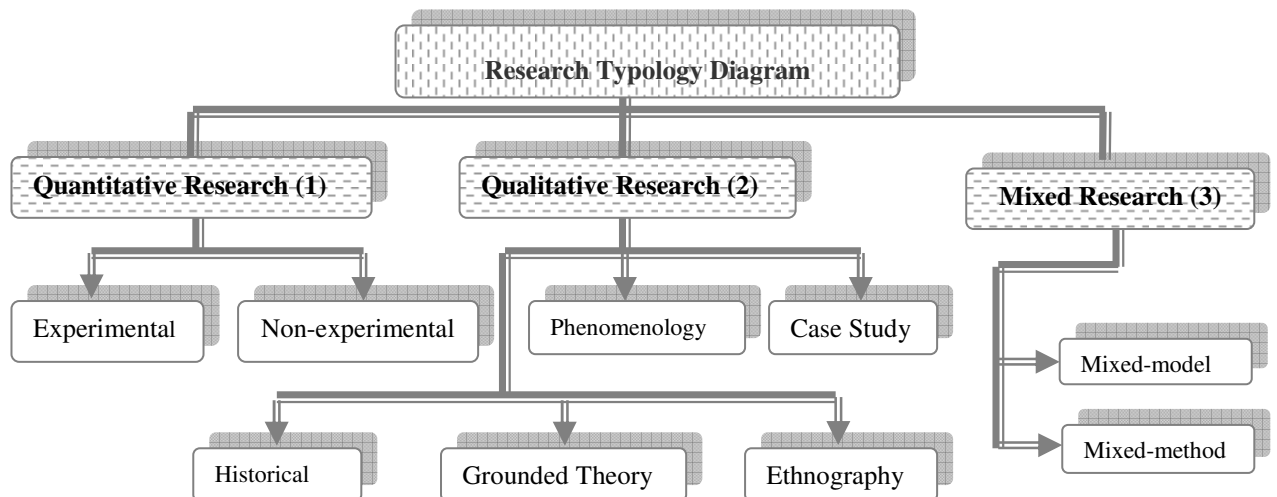


hypotheses (Chapter Eight). They also refer to a means of objective related to the degree and character of the relationship between dependent and independent variables.

## 6.7 RESEARCH DESIGN - SURVEY STRATEGY

Research design is a basic plan or strategy to be adopted for a particular study that will make it possible and legitimate to draw more general conclusions from the study (Oppenheim, 2000). Thus, the research design indicates how a research sample will be drawn, what sub-groups will be formed, what comparisons will be made, whether or not there is need to control research groups, what variables must be measured and how these measures will be related to external events. Remenyi et al. (1998) note that the survey is a research strategy involving collection of data from a large number of people or a sizeable population. In general, the main criteria adopted when selecting a particular survey strategy are determined by research approach (Saunders et al., 2007) which depends, in turn, on the study's objectives. Figure 6.5 illustrates that research typology contains quantitative methods measured as experimental and non-experimental, mixed method and model research, whilst qualitative research is measured as phenomenology, ethnography, case study, historical and grounded theory (Pamerino, 1999).

**Figure 6.5 Research Typology Diagram**

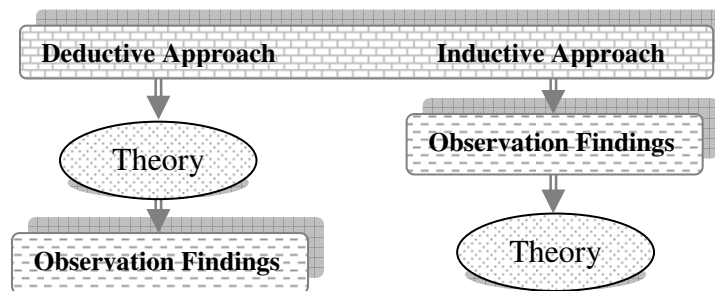


Source: Palmerino (1999).

The main criteria in choosing a particular survey strategy is the research approach adopted in undertaking the research (Saunders et al., 2007), which in turn, depends on research aim, objectives and questions. For instance, Hussey and Hussey (2003), adopting the deductive approach, leads the researcher to employ the experimental or survey strategies. In contrast, adopting the inductive approach leads the researcher to employ the strategies of case study, grounded theory and action research. According to the deductive approach, researchers deduce

their studies' hypotheses based on known facts (theories), translate them into operational terms and test them in empirical ways by using statistical methods (Bryman, 2007, Saunders et al., 2007). Consequently, the aims of each approach are also different. The aim of a deductive approach is to involve moving from the general (theoretical position) to the specific (inquiry of the research), while the inductive approach starts from a set of observations to build a theory (Anderson, 2004). Generally, the inductive approach involves moving from the specific to the general. Figure 6.6 shows the two approaches to the relationship between theory and research.

**Figure 6.6 Deductive and Inductive Approaches**



Source: Bryman (2004).

This research is mainly deductive despite being based on triangulation methods of primary data collection. The rationale of this survey choice is for the following reasons.

- They are usually associated with the deductive approach and the most popular and commonly used strategies in business studies or management research (Saunders et al., 2007).
- The research topic, related to a wealth of literature, helps develop a theoretical framework and hypotheses leading to the adoption of the deductive (quantitative) approach, whereas, when the research topic is new with scant existing literature, it may be more appropriate to generate data and analysis thoroughly to formulate a theory (inductive qualitative approach) (Creswell, 2003).
- This is the most common survey strategy when data must be collected from a sizeable population at a particular time (Leedy and Ormrod, 2005).
- A sample of the findings from the survey can be generalised in order to understand the population better.
- Generalisation: survey-based research (quantitative approach) seeks to identify relationships that are common across organisations and, therefore, provide a general statement upon, or a theory about, the phenomenon being researched (Bryman, 1993 and Eldabi et al., 2002).

- This study can be classified as descriptive and as one involving hypothesis testing, in which relationships between certain variables are to be verified and phenomenological strategies are not appropriate.

## 6.8 DATA COLLECTION METHODS

Data collection methods are an integral part of research design and depend primarily on the research objectives, approach and strategy (Sekaran, 2003). Data can be gathered from secondary and primary sources, both of which have been extensively used in social and business research. Both methods of data collection were adopted in this study as suggested by Malhotra and Birks (2006), who strongly recommended this strategy, together with the combination of quantitative and qualitative methods, in order to provide opportunity for triangulation where possible. Primary and secondary data sources are now examined in the following subsections.

### 6.8.1 Secondary Data

Secondary data refers to all sources of information that are available before a research project is undertaken. Sekaran (2003: 63) mentions that: “[...] *Secondary data can be extracted from various sources, including books and periodicals, government publications and information sources, the media, census, stock market reports, and mechanised and electronic information of all kinds such as the bar code, scanner data, and the internet. Secondary data can be culled from the historical records of the organisation itself, from information already available on the internet, or from external sources such as the ones mentioned above, either through the internet or otherwise*”. In this study, secondary data has been obtained from recently-published research and articles on the relationship between economic reform and the stock market. This involved a review of the literature and the most recent publications related to economic indicators in general, and in the financial sector in particular. Quite specifically, literature relating to this system’s application in Libya has been featured. Data covers the 1970-2007 period, with special focus on the post-sanction economic reform programme (1999-2007) and, because of the availability of data collection sources, annual figures are used; unpublished data, for instance, theses and other relevant material from the General Statistics department in Libya, the General People’s Committee Secretary of Economy and Administration Record Management, Tripoli branch. The World Bank and the IMF are, additionally, useful sources of statistics and other data relating not only to the Libyan situation, but to the market and emerging economic indicators besides. Saunders et al. (2007) explained that using secondary data within organisations may additionally have the advantage

that, because the information has already been collected, its use provides an unobtrusive measure. This is supported by Cowton (1998) who emphasises the benefits of using secondary data in sensitive situations and refers to this advantage as eavesdropping.

## 6.8.2 Primary Data

Primary data, on the other hand, is gathered personally from subjects by the researcher; this can be done in various ways utilising different (both quantitative and qualitative) key methods (Silverman, 2001). As indicated previously, this study adopted a mixed-method approach to the research design and data collection activities, combining quantitative and qualitative methods within the overall framework of a single case study (Libya) that depends upon the collection of both primary and secondary data. However, within that design, a series of smaller case studies were conducted of countries' progress since introducing stock exchanges, thereby providing a comprehensive data bundle. A questionnaire survey was used to collect information from all financial sector organisations in Libya, relating to changes in their performance since the introduction of economic reform measures. In addition to the use of the *self-administered questionnaire*, *semi-structured interviews* are employed. These two methods are empirically examined in the next subsections.

### 6.8.2.1 Self-Administered Questionnaire

Questionnaire can be defined as “*a reformulated written set of questions to which respondents record their answers, usually within rather closely defined alternatives*” (Sekaran, 2003: 236). For this research, the use of a questionnaire method follows directly from the research objectives. Hussey and Hussey (2003) argued that the questionnaire is the core method in survey research and serves to ask a list of carefully structured questions, chosen after considerable testing to achieve a reliable response from a selected sample. Bouchard (1979: 269) states: “[...] *Methods are means to ends, no more, no less. The key to good research does not only lie in choosing the right method, but rather in asking the right question and picking the most powerful method for answering that particular question. Methods are neither good nor bad, but rather more or less useful for answering particular questions of a particular time and place.*” The questionnaire survey has the advantage of being cheaper and less time-consuming than certain other methods (such as interviewing) and also allows completed responses to be collected within a short period, which gives the opportunity to introduce the research topic and motivate respondents to supply answers truthfully. Many researchers (e.g. Oppenheim, 2000; Easterby-Smith et al., 2002; Sekaran, 2003) emphasise that questionnaires are the most popular method of collecting data and can be administered personally, mailed

through the post, or electronically distributed. In this study, the questionnaire method was appropriate considering the research objective since were chosen as the main data collection method. In general, the rationale for using the questionnaire method for this research is now explained.

- According to Sekaran (2003) there are a number of advantages in using self-administered questionnaires: all the completed responses can be collected within a short period of time and a good rapport can be established to motivate respondents; there is an opportunity to introduce the research topic and motivate the respondents to give their answers honestly; any doubt or misunderstanding about the questionnaire will be clarified; it is less expensive when distributed to group of respondents; it gains an almost 100 *per cent* response rate.
- The research objectives are to describe behaviour concerning economic reform and the stock market in Libya and to explain relationships between certain variables. A description of relationships needs the use of a statistical package, in this case the Statistical Package for the Social Sciences (SPSS software). The questionnaire can provide the required information relatively quickly given that the findings from the sample financial institutions can be generalised to all financial institutions. Cohen et al. (2000) explained that questionnaires can be used to determine points and future plans. They can be further adopted to explore effectively the relationships between variables.
- The questionnaire approach has been extensively used in previous research into management and business research at Huddersfield University (i.e. Akous, 2003; Casserly, 2003; Khaldi, 2005; Alnsour, 2006; Al-Hussari, 2006; Ahmad, 2007).
- It was expected that many Libyan financial institutions and companies would respond to the questionnaire because this research would provide one of the first studies of economic reform and performance of stock market trading in the Libyan context.

#### **6.8.2.1.1 Population and Samples**

The research population is the entire group of people, events, or things of interest that the researcher wishes to investigate in order to collect the required data for the research problem (Sekaran, 2003). The process of identification of a research population depends on the type of problem being explored and the purpose of the main research objective, besides other major concepts or issues involved (Awda and Malkawi, 1992). As stated earlier, a questionnaire survey was used to collect information from all financial sector organisations in Libya, relating to changes in their performance since the introduction of economic reform measures.

It is appreciated that such a strategy can suffer from a low response rate (Starbuck, 2004) but, as this method is considered the most effective in the circumstances, it was used cautiously by the researcher and, in an attempt to improve the response, the study sample included more than one person in each financial sector. As noted in the Introductory Chapter and Chapter Two, this research concentrates upon five sectors within thirty-four financial and non-financial organisation representing the major part of the Libyan economy in terms of stock market, as reported in Table 6.2.

**Table 6.2 Study Population (Sample Size)<sup>a</sup>**

Code	Groups	Description	Population size	e	Sample size
<b>1</b>	<b>A. Capital Market</b>	A stock market is part of the capital market in that they provide a market for the shares and loan stock that can represent the capital once it has been raised/ a stock market is central to the creation and development of a strong and competitive economy.	145	-	68
	Libyan Stock Market				
	<b>B. Currency Market</b>	Currency market divided to the central bank principle and independences serve as control on government policy through specific rules leading government borrowing from central bank.	309	.05	15
<b>2</b>	Central Bank of Libya		289	.05	14
<b>3</b>	Commercial Bank		268	.05	13
<b>4</b>	Ummah Bank		287	.05	14
<b>5</b>	Jamhoriya Bank	Other banks perform general financial activities, such as financing working capital, term finance, import and export activities, and deposit services.	308	.05	15
<b>6</b>	Commerce and Development Bank				
	<b>C. Private Sector</b>	The part of an economy that is not under government control. Private sector, however, included private companies, such as: banks; savings; loan associates and also services. According to the Libyan economic reform, law no.1 1993 was issued in order to allow the establishment of private banks, also, concerning the engagement in economic activities such as corporations, partnerships, and joint stock companies, in addition to the ownership of micro public economic activities.	129	.05	6
<b>7</b>	Sahara Bank		108	.05	5
<b>8</b>	Wahda Bank		89	.05	4
<b>9</b>	Tripoli Al-Ahaly Bank		85	.05	4
<b>10</b>	Ahly Souq Alquma Bank		88	.05	4
<b>11</b>	Agricultural sector		128	.05	6
<b>12</b>	Libyan Insurance Company		89	.05	4
<b>13</b>	United Company for Insurance		87	.05	4
<b>14</b>	National Company for Mill and Animal Feed	Followed by law no.9 for 1992 concerning the engagement in economic activities such as corporations, partnerships, and joint stock companies, in addition to the ownership of micro public economic activities. In 2003, the Prime Minister announced a list of 361 firms in a variety of economic sectors.	109	.05	5
<b>15</b>	The General Company for Chemical Industries		88	.05	4
<b>16</b>	Pharmaceuticals and Medical Supplies		89	.05	4
<b>17</b>	The Libyan Iron and Steel Company		107	.05	5
<b>18</b>	Arab Cement Company		87	.05	4
<b>19</b>	Saria investment and commerce bank		88	.05	4
<b>20</b>	Public company for Cement		106	.05	5
<b>21</b>	Hotels		108	.05	5
<b>22</b>	Telecommunication				
	<b>D. Public Sector</b>	The part of an economy that covers the activities of the government and local authorities. Nonetheless, this includes education, health and social services, local public services, the police, etc... Although, the Libyan economy consists of two main sectors, oil and non-oil sectors, in 1992/93 the state began to re-structure major sectors in the economy, several industries were privatised and investment was encouraged.	229	.05	11
<b>23</b>	Industry (Manufacturing)		195	.05	10
<b>24</b>	Construction		188	.05	9
<b>25</b>	Wholesale		205	.05	10
<b>26</b>	Transportation		209	.05	10
<b>27</b>	Services		249	.05	11
<b>28</b>	Petroleum				
	<b>E. Financial Institutions</b>	Financial institution: an organisation whose core activity is to provide financial services or advice in relation to financial products. Libyan financial institutions offer long term lending to a wide variety of economic sectors. They finance equity for start-ups and thus contribute to enlarging business activities within the Libyan economy.	199	.05	9
<b>29</b>	Libyan Arab Foreign Bank		206	.05	10
<b>30</b>	The Agriculture Bank		189	.05	9
<b>31</b>	Savings and Real Estate Bank		228	.05	11
<b>32</b>	National Development Bank				
<b>33</b>	Pension and Social Security Institution		205	.05	8
<b>34</b>	Libyan Arab Company for Foreign Investment		222	.05	10
<b>TOTAL</b>			<b>5778</b>		<b>330</b>

Notice a: The total workforce numbered 5778 employees distributed among the sectors. The avoidance of sampling error was accomplished by using a stratified sampling technique. The first step in obtaining a representative sample from the sectors was to select all employees in each sector and then to classify them separately. Then in order to acquire a level of confidence of 95 *per cent* a random sample of 5 *per cent* was chosen from each sector to represent that sector in the sample group, based on the number of workers in each sector.

Source: Developed for this research Subsection 6.8.2.1.1: Population and Samples.

Collis and Hussey (2003: 56) defined a sample as “*a subset of population*”. Hair et al. (2005) stated that it is very important to determine the appropriate sample size prior to data collection, from either a large (infinite) population or a small (finite) population. They also added that the researcher can determine the sample size by referring to factors such as time available, budget and previous similar studies. The sample of this research can be defined as a sub-set of the population, for instance a collection of population units drawn from a frame or frames (Scherfffer et al., 1990). The sample in respect of primary data sources comprised 328 questionnaires (see Subsection 6.8.2.1.3) distributed to the study sample and 203 questionnaires that were returned and usable. Respondents all worked for Libyan financial institutions and companies located in the city of Tripoli<sup>27</sup>. The Libyan stock market, central bank and manufacturing companies are classified as public sector shareholding entities, including the Association of Banks, finance and insurance companies, service companies, industrial organisations and telecommunications companies. Participants were all in management and from various departments (e.g. managing directors, deputies, investment managers, budget, finance and accounts personnel, computer analysts etc).

In the same vein, Malhotra and Birks (2006) pointed out that sample size in business and marketing research projects is influenced and determined by many factors, which can be summarised as follows: the average size of samples in similar studies; the nature of the research (e.g. in qualitative research, the sample size is typically small, meanwhile with quantitative research, large samples are required); the nature of analysis, (if sophisticated analysis of the data using multivariate techniques is required, the sample size should be large); resource constraints, because any marketing research project, money and time are limited. Taking these factors into consideration, Table 6.3 provides an overview of the sample sizes used in previous studies with details of response rates and usable responses received, as related to this research study (see Subsection 6.8.2.1.3). It can be seen that there is no certain sample size in such studies. Lehmann (1989) mentioned that sample sizes, which have been used by others conducting similar studies in the past is an acceptable approach. Generally, however, quantitative methodologies are associated with large sample size to obtain a high degree of accuracy and to ensure that findings are representative of the population being studied and unbiased (Collis and Hussey, 2003; Sekaran, 2003; Saunders et al., 2007).

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<sup>27</sup> The city of Tripoli is the capital of the country and has most of the headquarters of the financial institutions and companies and a higher population compared to other cities in the country.

**Table 6.3 Sample Size: Previous Studies <sup>a</sup>**

Authors	Year	Purpose of Study	Research Approach	Size of Sample	Response
Goode and Moutinho	1995	Banking/UK	Survey/ Questionnaire	451	380 (42 %)
Levesque and McDougall	1996	Retail banking/Canada	Survey/ Questionnaire	400	325 (81 %)
Edris and Almahmeed	1997	Banking/Kuwait	Survey/ Questionnaire	500	304 (61 %)
Daniel	1999	Banking and building societies/UK and Republic of Ireland	Survey/ Questionnaire	44	25 (57 %)
Lassar et al	2000	Banking/USA and South America	Survey/ Questionnaire	300	65 (22 %)
Abdelaziz	2001	Banking/Egypt	Survey/ Questionnaire	300	247 (82 %)
Al-Hussaini	2001	Quality of financial market/Kuwait	Survey/ Questionnaire	400	306 (77 %)
Polatoglu and Ekin	2001	Banking/Turkey	Survey/ Questionnaire	724	114 (15.7 %)
Appiah-Adu et al	2001	Banks and building societies	Survey/ Questionnaire	121	52 (43 %)
Jamal and Naser	2002	Retail banking/USA	Survey/ Questionnaire	200	167 (83.5 %)
Jabnoun and Al-Tamimi	2003	Commercial banks/UAE	Survey/ Questionnaire	800	462 (58 %)
Yavas et al	2004	Banking/Germany	Survey/ Questionnaire	500	226 (45 %)
Akinci et al	2004	Banking/Turkey	Survey/ Questionnaire	1228	140 (11.4 %)
Al-Kizza and Akbar	2005	Impact of business environment/Libya	Survey/ Questionnaire	164	86 (52.4 %)
Al-Hroot.	2007	Destination Marketing/Jordan	Survey/ Questionnaire	1120	168 (15 %)

Notice a: Further information relating to these surveys/questionnaires can be found under the author's name in the research reference.

Source: Developed for this research Subsection 6.8.2.1.1: Population and Samples.

### **6.8.2.1.2 Designing and Developing the Questionnaire**

In order to achieve the aims of the questionnaire, several basic issues should be considered. Sudman and Bradburn (1983) argue that a well-designed questionnaire can make the tasks of both participants and researchers easier and reduces errors. In this regards, a questionnaire should be done with the aim of providing answers to certain questions that will allow the stipulated research objectives to be achieved. A questionnaire with good flow is easier to use; it motivates respondents to progress through it and assists them to remember and provide accurate information (Mangipne, 1995). Several researchers (e.g. Oppenheim, 2000; Aaker et al., 2001 and Saunders et al., 2007) have provided guidelines in respect of questionnaire design, but the final approach and sequencing of questions should be determined not only by the research objectives, as mentioned already, but also by pilot work results (Oppenheim, 2000). Therefore, the following steps were taken.

#### **6.8.2.1.2.1 Planning what to Measure**

Following Aaker et al. (2001), questions were designed to achieve research objectives and to enable validation of answers obtained. Firstly, objectives were clarified to keep them firmly in



mind and to be achieved. Secondly, questions relating to research variables were developed in order to provide sufficient material for analysis. Thirdly, questions relating to the economic reform and stock market were designed to obtain general information and, finally, testing of preliminary versions was undertaken.

#### **6.8.2.1.2.2 *Formatting the Questions***

This study's questionnaire utilised four scales: the nominal scale, used to obtain information about respondents and their companies according to questions in the questionnaire, relating to demographic data, such as type of financial market, banking sector and share ownership patterns; the ordinal scale which was employed to analyse some demographic data, such as the level of institutionalisation; the interval scale which was used to measure managerial perspectives of sources and information; the rating scale, which was used to obtain such data for this research. Given that these scales do have some disadvantages, the rationale for using them is threefold.

- In this research it is necessary to use a variety of statistical techniques and conduct powerful statistical analysis (e.g. using linear regression and econometric techniques). Attitude-scaling is the most widely used technique in such business research.
- It is easy for respondents to comment on such scales as they are simple.
- Rating scales allow respondents some degree of flexibility to reflect intensity of their views, thinking, feelings and understanding.

For this study, it was decided to adopt a five-point Likert scale throughout the questionnaire in order to indicate the degree of agreement or disagreement with each statement included in the questionnaire, in which the range was from 1 "strongly disagree" to 5 "strongly agree".

#### **6.8.2.1.2.3 *Question Wording and Layout Decisions***

Question design is a creative process that should be linked to a study's conceptual framework (Oppenheim, 2000). Actual wording is one of the most critical aspects of questionnaire design, requiring a clear and unambiguous language of communication to be established with respondents to collect data. According to Aaker et al. (2001), the wording of particular questions can bear a considerable influence on how a research respondent interprets them. Additionally, question layout is of paramount importance, especially when dealing with a self-completion questionnaire. Oppenheim (2000) explained that the layout should, in addition, be attractive to encourage respondents and provide convenience for the data processors who have

to enter data on their computers. Several recommendations regarding choice of layout and wording of questions have been offered by Oppenheim (2000), Easterby-Smith et al. (2002), Sekaran (2003) and Saunders et al. (2007). All these recommendations were taken into account in the design of this study's questionnaire (see Appendix C and D).

#### **6.8.2.1.2.4 Translation of the Research Questionnaire**

Although English is the official language of business and commerce in Libya, and widely spoken in business sectors, especially in mixed companies (e.g. oil and foreign banking), it was anticipated that respondents would feel more comfortable using their native language. Hence, the questionnaire, whilst originally in English in the UK (see Appendix G), was translated into Arabic in Libya to render the questions very clear and avoid the possibility of misunderstandings. It was decided to distribute the questionnaire in both English and Arabic; the reasons being that some respondents prefer to answer the English copy. Malhotra and Birks (2006) proposed methods for translating a research questionnaire for use in an international research context. The method of back translation consists of the questionnaire being translated by a bi-lingual person from the original language into the target language and then being translated again by a second bi-lingual person from the target language into the original language in order to remove any errors or misinterpretation. In the current study back translation was used but, in addition, the final copy of the questionnaire in Arabic was sent to an Arabic language expert who checked grammar and wording in order to ensure that the final version was clear and understandable.

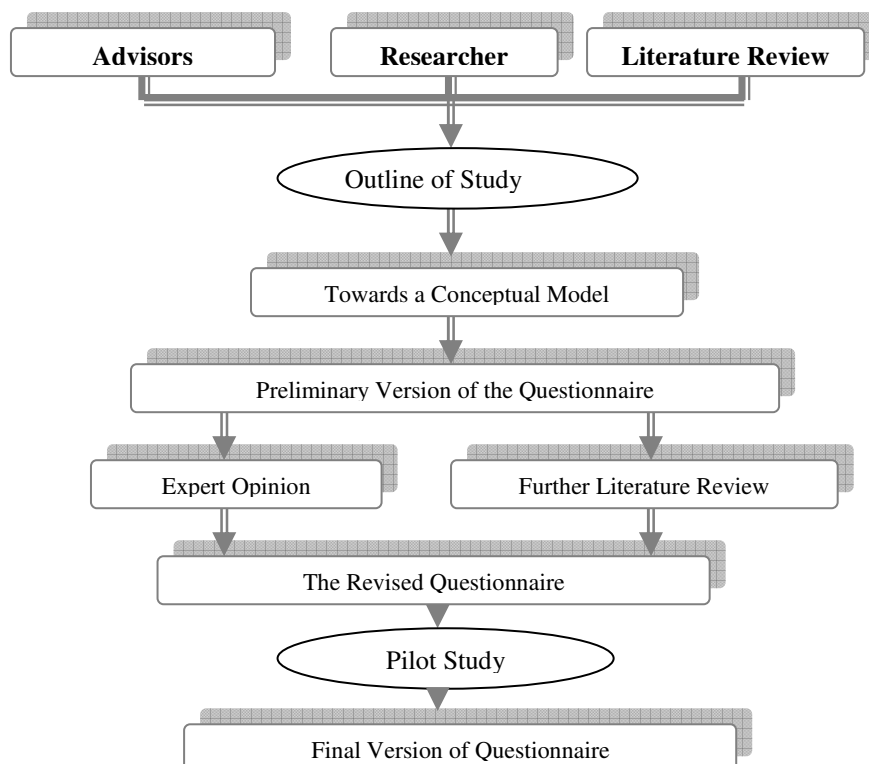
#### **6.8.2.1.2.5 Pilot Testing the Questionnaire**

Pre-testing the questionnaire prior to data collection is a vitally important step in research since the process has the practical benefits of ensuring that the final version contains questions that are specific, understandable and capable of obtaining a response from those answering (Oppenheim, 2000 and Saunders et al., 2007). In this respect, Malhotra and Birks (2006) recommend piloting since this allows for improvement of the instrument. Saunders et al. (2007: 386) state: *"The purpose of the pilot test is to refine the questionnaire so that respondents will have no problems in answering the questions and there will be no problems in recording the data. In addition, it will enable you to obtain some assessment of the questions' validity and the likely reliability of the data that will be collected"*. Clearly, there are several advantages, as indicated by various researchers such as Hussey and Hussey (2003), Sekaran (2003) and Saunders et al. (2007), who have explained the purpose and nature of pilot testing.

1. The pilot test enables the researcher to obtain some assessment of the questions' validity and likely reliability of data that will be collected.
2. Pre-testing may be conducted with just a small number of respondents to establish comprehension.
3. Pre-testing may involve friends, colleagues, experts or academics and people with diverse insights and ideas.
4. Pilot-testing almost guarantees that respondents in the study will have no problems in answering questions as these have been refined during the process, and that there will be no problem in recording data.
5. Pilot-testing allows for research variables, questions and ideas to be verified in terms of their adequacy and ability to investigate the research problem.

Figure 6.7 illustrates the research elements and activities required for the pilot studies undertaken, developed on the basis of information gathered from literature and other documentation.

**Figure 6.7 Research Activities and the Pilot Test**



Source: Hardaker (1997).

Many researchers, for instance, Bryman and Cramer (2001) and Banced and Mittoo (2002), suggested that short questionnaires receive higher response rates. This study's questionnaire consists of five sections; nominally, each has a different number of questions and the

questionnaire was limited to 10 pages. Consequently, PhD students in the University of Huddersfield Business School took an average of 25 to 30 minutes to complete this questionnaire. Once the opinion of the researcher's supervisory team had been taken into consideration to ensure that the questionnaire's length was reasonable, understandable and the layout as precise and attractive as possible, the aforementioned suggestions concluded that this was the best method of testing the questionnaire. In this research, the pilot study was conducted in four stages.

*The first stage:* piloting the questionnaire involved providing the draft version to four PhD students within the University of Huddersfield Business School and another three PhD students from each of Manchester and Liverpool Business Schools. They proffered many useful comments relating to the wording of questions, the clarity and ability to understand its contents. Most of their comments were, accordingly, taken into consideration. This method of questionnaire pre-testing was proposed by Remenyi et al. (1998: 151): *"Approaches to pre-testing can be fairly informal where one consults friends, colleagues, experts and people of adverse opinions, or it could be more informal, involving a pilot study which is a replication, on a small scale, of the main study"*. *The second stage:* the questionnaire was given to five members of academic staff at the University of Huddersfield Business School. Three universities in Libya also received two versions of the questionnaire, one in English and one in Arabic (see Subsection 6.8.2.1.2.4). They were asked to provide feedback concerning the questionnaire in terms of design, format and layout, besides the addition and deletion of certain questions, words, contents and measurements. Useful feedback was received from the academic staff which resulted in amendments to the wording and scales of questions. *The third stage:* a copy of the questionnaire was e-mailed to 16 academic researchers internationally and to IMF staff members dealing with the Arabic situation, specifically pertinent to the Libyan economy. Positive feedback was received from these groups including suggestions for alterations to the wording and measurement of a number of questions related to the balanced scorecard. *The final stage:* the pilot survey was delivered to a number of experts in Libya, among them fifteen members of financial and non-financial sectors. These were selected randomly from the sample and used for the survey. Ten questionnaires were completed and returned. This reflects a response rate of 66.7 *per cent* of the pilot survey's total sample. Feedback was received from respondents, which suggests that the questionnaire was clear in nature and straightforward to complete.

Many modifications were made to the questionnaire as a result of pre-test and pilot test stages. In response to the comments received, the number of pages was reduced without excluding

any questions. Most of the questionnaire modifications related to organisation comprehensibility, layout, instructions and improvements to the clarity of content to make it more intelligible to readers.

#### **6.8.2.1.2.6 Fieldwork**

At the initial stage of the fieldwork a personal visit was made to the Libyan financial market, the central bank of Libya, companies and other financial organisations in order to build trust with participants and to determine a deadline for completing the questionnaire and interviews. In addition, through these visits the researcher was able to determine which managers are in charge and to be interviewed. This stage started in September 2007 and ended in January 2008. For fieldwork in Arab countries, hence, in Libya, to be successful, certain requirements must be met.

- The researcher must be competent in Arabic (first language of the researcher), be aware of cultural influences, appreciate the time available to both researcher and participants and understand all the ethical issues concerned with conducting research in that particular environment.
- The researcher must be aware of the importance of human and social relationships (family support, friends, relatives) and be able to capitalise upon these since social networking is very important and helpful.
- The researcher must be able to encourage the participants' full co-operation and, hence, be capable of ensuring that they completely understand both purpose and nature of the research.
- The researcher must be able and prepared to learn from the experiences gained in the process and to accept that these may change the research's intended plans as it progresses. In other words, it is necessary to appreciate that there is much to be learnt about the subject area in Libya, both theoretically and empirically, since it is a developing country where there has been little empirical work concerned with the financial market.

#### **6.8.2.1.3 Response Rate**

The main survey was carried out in 34 (the entire population) financial and non-financial organisations between September 2007 and January 2008 (see Table 6.2). A total of 330 questionnaires were distributed and of these 203 were returned completed. A total of 205 questionnaires were returned, two of which were ineligible for consideration because they

were not completed in a satisfactory manner (see Table 6.5). The total response rate for this research is 61.5 *per cent*. Such an adequate response rate, which is, additionally, a clear indication of business management interests in the topic, can be attributed *inter alia* to following Oppenheim's (2000) and Robson's (2002) recommendations of increasing the response rate.

- Sending an official letter to potential respondents prior to questionnaire distribution (see Appendix D) in order to introduce the research to respondents.
- A covering letter should accompany the questionnaire (see Appendix C) to explain research objectives and emphasise that the respondent's co-operation is a major contributory factor to the research's success.
- The researcher reminded respondents via telephone calls and personal visits to answer the questionnaire.
- All the information provided by the participants and their answers will be treated in confidence and will not mention their names or companies in the written documentation.

A total of 125 respondents did not respond due to several reasons as listed in Table 6.4. Non-response was attributed to: being busy or work pressure 34.4 *per cent*; financial sectors not underestimating people's research information 15.2 *per cent*; apology, with no reason offered 27.2 *per cent*; questionnaires unreturned 23.2 *per cent*.

**Table 6.4 Number of Respondents who did not Respond**

Reasons	Non-responses (N=125)	
	N	Percentage
Busy/work pressure	43	34.4
Financial sectors not releasing information	19	15.2
Apology without reasons	34	27.2
Other reasons	29	23.2
<b>Total</b>	<b>125</b>	<b>100</b>

Source: Developed for this research from fieldwork data analysis.

The chi-square test was used to test whether or not the sample was representative and unbiased. Table 6.5 displays the output of chi-square statistics as indicating no statistically significant difference between respondents and non-respondents within the financial and non-financial sectors ( $\chi^2 = 3.872$ ,  $P = 0.424$ , 2-sided) (more details see Chapter Seven: Sample Description Characteristics).

**Table 6.5 Sample Representative by Financial and Non-financial Sectors**

Treatment Group	Sample (valid N=330)			
	Responses	Non-responses	Total N	Per cent
Capital Market (CLM)	49	19	68	20.6
Currency Market (CYM)	43	27	70	21.2
Private Sector (PVS)	41	28	69	20.9
Public Sector (PCS)	38+2 <sup>a</sup>	22	60	18.8
Financial Institutions (FLI)	32	29	61	18.5
<b>Total</b>	<b>205 (61.9%)</b>	<b>125 (38.1 %)</b>	<b>330</b>	<b>100</b>

Notice a: Total number of responses from the public sector was forty of which two were unusable.

Source: Developed for this research from questionnaire survey data analysis.

### 6.8.2.2 Semi-structured Interviews

The interview can be described as a purposeful discussion between an interviewer and interviewee (a respondent), with the intention that the researcher can elicit certain information from the interviewee which is of relevance to the research questions (Frankfort-Nachmias and Nachmias, 2007). Hussey and Hussey (2003) define an interview as a method of collecting data in which participants are asked questions in order to ascertain the solution or what they think or feel. This technique can be adopted whether the research uses a positivist or phenomenological approach. In addition, several Arab researchers have used semi-structured interviews for their data collection. For instance, Al-Faleh (1987), Al-Rasheed (1996), Al-Ali (1999), Al-Bahusseir (2000) and Al-Duaij (2004) all found this technique to be advantageous in Arab organisations, where managers prefer to talk rather than to complete a questionnaire. According to Knox and Masilela (1990), the opinions of such managers and professionals are significant as they may be active as *social gatekeepers* and within their distinctive values, attitudes and role orientations, assist to set the agenda and ultimate direction of policy development related to unplanned settlements. According to Leedy and Ormrod (2005), use of interviews as a data collection method depends on research objectives. To help in this decision, it must be considered that interviews can be divided into the following three types: structured, unstructured and semi-structured. In this research the semi-structured interview technique was selected for the following reasons.

- Semi-structured interviews have the highest degree of flexibility of all qualitative methods and are able to reach specified subjects more effectively than the questionnaire method (Leedy and Ormrod, 2005).
- Usage of interviewer-administered questionnaires requires the researcher to interview respondents and, as this research uses semi-structured interviews as well as a questionnaire approach, it is not necessary to interview respondents twice.

- c. It allows the researcher to ask more complex questions and to ask follow-up questions not possible in the questionnaire. Moreover, it takes into account the non-verbal communication such as the feeling, behaviour, attitudes and facial expression of the interviewee. Thus, it may allow a higher degree of confidence in the replies than in the questionnaire responses (Hussey and Hussey, 2003).
- d. The use of the interviews increase the certainty. Due to the direct contact between the interviewer and interviewee it allows the researcher to explain purpose of the study more freely and to clarify any doubt or to avoid misunderstanding of the questions or the concepts (Oppenheim, 2000).

In this research, semi-structured interviews were conducted after the questionnaire had been administered. It is important to state that they were used to obtain a clearer understanding of the whole problem, to allow the researcher to focus on particular themes that emerged in the questionnaire findings and to explore them.

#### ***6.8.2.2.1 Pre-testing and Piloting the Interview***

To ensure the questions in the interview schedule were valid in terms of research objectives, it was necessary to pilot them. Consequently, the interview questions were pre-tested with a small number of managers (six from the Libyan stock market and financial sector general managers) mainly to determine that the wording of the questions was unambiguous and to recognise what had to be effected to achieve a satisfactory response during the main study.

Test interviews were conducted to study the reaction of managers to particularly sensitive questions and to investigate the likely duration of interviews, as well as to estimate the time-scale for the research, taking into account peculiarities of the behaviour of the majority of Libyan business people. Interviewees were chosen on the basis of favourable access conditions and were used to assess both proposed data collection procedures and type of data needed to address the research questions. The subsequent subsection discusses key components of the interview pilot study.

#### ***6.8.2.2.2 Interview Sample***

It was decided that semi-structured interviews would be conducted with the manager of the Libyan stock market, along with the senior managers of banking sector organisations, companies and other financial institutions (two from each of five case study organisations, including one executive or senior manager who was one of the organisation's decision-



makers) (see Appendix J). The individuals who participated in the interviews were not respondents to the questionnaire survey but were chosen because they are the sole individuals with the requisite information about Libyan stock market issues, banking, management and finance, and because they occupied critical roles in their financial institutions. Interviews were conducted on the premises of the organisations concerned and either Arabic or English was involved as the medium of discussion, according to the interviewee's preference and to ensure that misunderstandings were avoided. Interviews lasted between 30 and 60 minutes and were tape-recorded, with the interviewee's prior permission. The semi-structured interview is very beneficial in providing an in-depth analysis of points under investigation. In this regard, Sekaran (2003) argues that, in organisational settings, the opinions of leaders who are very knowledgeable and who can provide the desired information are included in the sample, either because they are the only ones who possess it, or to conform to some criteria set by the researcher. However, in choosing a sample for semi-structured interviews, it is additionally necessary to remember several issues. In this research targeted general managers and senior managers were interviewed rather than asked to complete a questionnaire. The reasons behind that are now given.

- In the organisational setting the opinions of leaders who are very knowledgeable are included in the sample. Enlightened opinions, views and knowledge constitute a rich data source (Sekaran, 2003).
- General managers, who are found in the headquarters of each organisation and companies, are the most knowledgeable people in terms of financial market practise.
- People in the financial sector who had refused to respond to the questionnaire would probably not agree to grant an extensive personal interview
- Using the questionnaire respondents as a sample frame has the advantage, in both selection and analysis, of being able to draw on substantial information provided by the questionnaire.

#### **6.8.2.2.3 Interview Process**

Interviews utilised as a data collection method assume that participants' perspectives are significant and knowable (Kvale, 1996). During the first stage of using the semi-structured interview method, as shown in Appendix I, a list of eight questions to be covered varying from interview to interview was included in the pilot study. It found that interviews depend not solely on the quality of the questions asked, but on the knowledge of, and control over, the

interaction involved. Interviews were conducted with respondents from financial and non-financial organisations and companies in order to account for respondents' specific organisational background. Interviews took the form of conversations between the researcher and the respondents and required approximately 30-60 minutes each. Most semi-structured interviews were held at the managers' official offices for their convenience. Every interviewee was explicitly asked if they would give permission for the interview to be recorded or taped. The researcher aimed to make 18 semi-structured interviews; a total of 14 were achieved, while 4 were not achieved because 2 of the people were very busy and 2 others cancelled the appointments many times until it was too late. Three of them were general managers and one of them was a senior manager. Six interviews were tape-recorded with permission; this was a significant action, which allowed interviewees the freedom to express their views. Eight interviews were not recorded and only partial note-taking was used. For those interviewees who did not give permission for tape-recording, notes were taken immediately the interviewees replied to their questions. Furthermore, interview skills required consciousness of the likely impact of the interviewer upon the respondents. It was necessary to maintain sensitivity to the cultural aspects of managers' sophistication, non-verbal as well as verbal, because interaction was not only structured by the questions but also by personal feelings. Thus, interviews with insiders (see Appendix J for an interview sample) and questionnaire surveys were performed at the second stage of the fieldwork and during the follow-up period.

## 6.9 VALIDITY AND RELIABILITY

Validity and reliability of a research study are crucial elements that function as basic criteria for evaluating its accuracy and precision. Validity is required in order to ensure that the same results are gained on re-measurement and reliability is necessary to ensure that the same results or observations are obtained or made by different researchers on separate occasions (Sekaran, 2003 and Saunders et al., 2007). Similarly, Leedy and Ormrod (2005) argued that a data collection method must be valid, accurate and reliable because both validity and reliability can affect the probability that a researcher obtains statistical significance in his data analysis and the extent to which a researcher can draw meaningful conclusions from data, as Table 6.6 displays.

**Table 6.6 Data Quality Issues Related to Questionnaires and Semi-structured Interviews**

<b>Data Quality Issue</b>	<b>Questionnaires</b>	<b>Semi-structured Interviews</b>
Validity	Low	High
Reliability	High	Low

Source: Hussey and Hussey (2003); Saunders et al. (2007).

Since the researcher adopted a multi-method approach using two data collection methods (personally-administered questionnaire and semi-structured interview), before, during and after collecting data, many procedures were undertaken to ensure validity and reliability of study findings. These procedures are now described.

### **6.9.2 Validity**

Validity is the extent to which research findings accurately represent what is happening in the situation (Hussey and Hussey, 2003). It is not raised as a data issue with regard to qualitative research (qualitative interviews) (Healey and Rawlingson, 1994; Saunders et al., 2007) but, rather, refers to the degree to which a test measures what it is intended to measure. There are two different types of validity. The first is predictive validity, which refers to the ability of the measuring instrument to differentiate among individuals with reference to predict a future criterion variable (Sekaran, 2003). The second is concurrent validity which refers to the extent to which a measurement scale relates to other well-validated measures of the same subject (Oppenheim, 2000). This is established when results obtained from the scale used are consistent with results from other scales utilised to measure the same object (Oppenheim, 2000). Moreover, it is possible to talk of external and internal validity. External validity of research findings refers to the data's ability to be generalised across people, settings and times (Cooper and Schindler, 2006) thus, it depends on the selection of a representative sample. In order to meet the requirements of validity, as suggested by Malhotra and Birks (2006) and Saunders et al. (2007), the following procedures were undertaken in this research.

1. An extensive literature review was undertaken to define and clarify the questions used in the questionnaire. Many questions used in the questionnaire were adapted or adopted from related previous studies which, in turn, made possible the comparison of the research's findings with those findings of other studies.
2. The use of the entire population was targeted as the sample for this research which raises the external validity; furthermore, there was a high response rate for the questionnaire (61.5 *per cent*) and for the semi-structured interviews (78 *per cent*).
3. To meet content validity requirements an extensive literature review was undertaken to define and clarify scales and measures adopted in the study. Sekaran (2003) stressed the need to use valid and reliable measures to ensure that research is scientific and indicated the importance of developed measures and scales since their reliability and validity have been established by previous research and are already known to be good.

4. Prior to using a questionnaire to collect data, the pilot study for the questionnaire was conducted in three stages: colleagues, academic experts and target companies. This test was to judge the content and face validity of the questionnaire. They suggested that the content validity of the questionnaire was established.
5. Usually, the validity of in-depth and semi-structured interviews is very high because of the flexible and responsive interactions possible between interviewer and interviewee, allowing the meaning to be probed, the topic to be covered from a variety of angles and questions to be made clear to respondents (Saunders et al., 2007).

### 6.9.3 Reliability

The reliability of a measure is an indication of the stability and consistency of the instrument which is without bias (*error free*) and, hence, ensures consistent measurement across time and across various items in the instrument (Sekaran, 2003). The *high level* of reliability that is possible in relation to questionnaires is made evident by Robson (2002) and Hussey and Hussey (2003). In this study questions were designed to be clear and understandable and the fact that they were all piloted suggests they were able to collect accurate data. Furthermore, the researcher attempted to ensure that it was the desired respondents who had completed the questionnaire by having an informal conversation with them where possible. There is an argument about the recommended minimum acceptable limit of *alpha*, Hair et al. (2005) and Sekaran (2003) argue that if the alpha coefficient scores are less than 0.60 they are considered to be poor. Nunnally (1978) and Sharma (2002) explained that the alpha or *cronbach alpha's* generally accepted minimum level is 0.50. In this study the *cronbach alpha* scores for the multiple-item questions that were adopted to measure the independent variables are presented in the research data analysis.

However, reliability is raised as a quality data issue when using semi-structured interviews, as it is not certain that alternative interviews conducted by other researchers would reveal similar information (Robson, 2002). Reliability can further be damaged by other factors, such as interviewer bias and interviewee or response bias (Saunders et al., 2007). The latter can be caused when interviewees are asked sensitive questions that they do not wish, or are not empowered, to discuss, with the outcome that the interviewee may provide only partial or biased information.

## 6.10 DATA ANALYSIS STATISTICS

Empirical analysis of quantitative data will be conducted by using *SPSS* software and will concentrate on economic variables identified as indicators of progress. Analysis of data from the questionnaire exercise and interviews will be standardised in a way that reduces raw data to categories and forms appropriate to the research themes (Myers, 1999). Malhotra and Birks (2006) proposed that choice of employing particular techniques depends on the type of data regarding the study's objectives and the nature of data (i.e. nominal, ordinal, interval and ratio) plus distribution of data (i.e. normal versus, non-normal). Hussey and Hussey (2003) suggested three areas for consideration when choosing and applying a suitable statistical technique:

- The number of variables to be used in the analysis
- The nature of the data, i.e. whether normally-distributed or not
- The measurement scale of the current data (nominal, ordinal, interval or ratio).

Two main statistical techniques can be used to explore the differences between groups and techniques to explore the relationship between variables to conduct the data analysis, parametric and non-parametric statistical tests; choice depends on the type of data (Malhotra and Birks, 2006). Parametric statistics are utilised when data *reflect an interval or ratio scale* and, secondly, *fall in a normal distribution* (Leedy and Ormrod, 2005: 263). Hair et al. (2005: 259) emphasise other assumptions when deciding to use parametric or non-parametric, stating that: “*in general, when the data are measured using an interval or ratio scale and the sample size are large, parametric statistics are appropriate.*”

Several arguments have been forwarded regarding usage of parametric and non-parametric tests. Siegel and Castellan (1988) and Sekaran (2003) contested that a parametric test can be used under two conditions when the level or scale of measurement is of equal interval or ratio scaling and when distribution of population scores is normal. But, if data fails to satisfy these conditions, the cautious decision should be to employ non-parametric statistical tests. Non-parametric tests are distribution-free tests and do not require the average score of each variable, as is the case in their parametric counterparts. Hair et al. (2005) explained, however, that, in business research, it is appropriate to treat the ordinal scale statistical treatment as if it were interval. Consequently, non-parametric statistical methods were used to conduct the analysis. The rationale for using these statistical methods is presented in the following subsections. More detailed explanations of some of the items in the following subsections are provided in Chapters Seven to Nine. In addition, the content of the following Subsections,

6.10.1 and 6.10.2, will be drawn off to interpret and explain the statistical findings discussed in those chapters.

### **6.10.1 Quantitative Data Analysis**

In order to achieve the research aim and objectives, a number of statistical techniques were used in primary data analysis. A brief discussion of these statistic is given in the following subsection.

#### **6.10.1.1 Inferential and Differences Statistics Test**

Inferential statistics have two major functions: firstly, to estimate a population parameter from a sample *e.g. whether the sample is representative of the total population*; secondly, to test statistically-based hypotheses *e.g. whether they are organisational variables related to the level of institutionalisation* (Leedy and Ormrod, 2005). Moreover, inferential statistics can be involved using a drawn sample of a population to the characteristics of the larger population (Leedy and Ormrod, 2005). However, Hair et al. (2005) contested that, if a researcher conducts a census of the entire population, statistical inference is unnecessary, because any difference or relationship, however small, is *true* and does exist. In this category, two of forms statistics were adopted. It was decided to utilise a number of statistical methods in analysing that data: descriptive statistics (i.e. frequency, mean, percentages and standard deviation); kurtosis and skewness. They were employed to test the first, second and third objectives. To carry out this analysis the five point likert scale was collapsed into three categories to facilitate the analysis of the large number of items included in the questionnaires. The rationale for using these statistical methods is presented below, and were in the tests presented in Chapter Seven in order to obtain a comprehensive picture of the research sample and issue.

##### **6.10.1.1.1 Descriptive Statistics**

Descriptive, or exploratory, statistics involve the transformation of raw data into a form that provides information to describe (and compare) a set of variables in a situation (Sekaran, 2003). Descriptive statistics, using frequencies, central tendency and standard deviation, were utilised to achieve explorative objectives of this research to determine sample characteristics and to develop primary data distribution. The frequencies procedure provides statistics and graphical displays that are useful for describing many types of variables. For a frequency report and bar chart, researchers can arrange the distinct values in ascending or descending order, or order the categories by their frequencies. The central tendency can be used to (1) provide a simple description of the entire population or sample and (2) make comparisons

between categories of individuals or between sets of figures (Gravetter and Wallnau, 2004). Central tendency can be measured by the *mean* or *median*. Leedy and Ormrod (2005: 258) state that: “*the [mean is] appropriate only for interval data, because it makes mathematical sense to compute an average only when the numbers reflect equal intervals along a particular scale.*” The *means* are further used to describe types of non-financial performance measurements according to their importance for measurement and evaluation purposes. On the other hand, standard deviation (SD), is used to establish the extent to which the values for a variable differ from the *mean*. Thus, SD is a measure of how well the *mean* represents the data. Field (2005) argued that small SD (relative to the value of the *mean* itself) indicates that data points are close to the *mean*, whereas, a large SD (relative to the *mean*) indicates that the data points are distant from the *mean* (i.e. the *mean* is not an accurate representation of the data).

#### **6.10.1.1.2 Kurtosis and Skewness**

Kurtosis is a measure of a distribution’s peaked-ness. Skewness is a measure of symmetry of a distribution. Both values were adopted to test and check the normality of each variable included in the research. Normality refers to the degree to which the distribution of sample data corresponds to a normal distribution. The latter is a theoretical contribution to the characterisation, in which the horizontal axis represents all possible values of a variable and the vertical axis represents probability of those values occurring (Hair et al., 2005). When skewness values are larger than +1 or smaller than -1 this indicates a significantly skewed distribution. A positively skewed distribution has relatively few large values and tails off to the right, whilst negatively skewed distribution has relatively few small values and tails off to the left. Thus, skewness values within the range of -1 to +1 and kurtosis values within the range of -3 to +3 indicate an acceptable range. Positive kurtosis is associated with distributions having long, thin tails; whereas, negative kurtosis is associated with shorter, fatter tails relative to the normal curve (West et al., 1995).

#### **6.10.1.2 The Statistical Techniques used to Test the Research Hypotheses**

This section describes the statistical methods used to test the research hypotheses (H1, H2, H3 and H4) using the survey data. The first three hypotheses examine the relationship between the independent variables and dependent stock market performance variables (see Figure 6.3); a regression model will be used to test the relationship in the environmental condition of the Libyan economy. On the other hand, the data analysis process conducted to test the fourth hypothesis will be based upon econometric techniques from other emerging markets (see

Figure 6.4). Due to the nature of the research hypotheses, as mentioned previously, two types of statistical techniques are used. The first technique can be used to explore the relationship between variables and the second can be used to explore the differences between groups. Consequently, the statistical tests used to investigate the hypotheses and analyse the results are mostly non-parametric tests. The tests that were used to examine the first three research hypotheses H1, H2 and H3 (Chapter Eight) and the statistics used are discussed below.

#### **6.10.1.2.1 Linear Multiple Regression Models**

##### **6.10.1.2.1.1 Multiple Regression Analysis Model**

Multiple regression analysis is a statistical technique that can be implemented to analyse the relationship between a single “dependent variable” and several “independent variables” whose values are known to predict the single dependent value selected by the researcher (Hair et al., 2005). Each dependent variable is weighted by an equation of multiple regression to ensure maximal prediction from independent variables (Hair et al., 2005). The weights denote ability to quantify precisely the relative significance of each proposed variable. Burton et al. (1989) define regression analysis as a statistical tool which may be adopted to learn more about the relationship between independent or explanatory variable(s) and dependent variables. The model of multiple regression takes the form of an equation (6.1) that predicts the value of outcome variable  $Y$  from a combination of prediction variables, each multiplied by its own respective coefficient, plus residual term:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \varepsilon_i \quad (6.1)$$

where  $Y$  represents the “dependent variable” and  $X_1 \dots X_n$  represent the “explanatory” or “predictor variables”, and  $\alpha$  and  $\beta$  are the “parameters” of the model. Random error term,  $\varepsilon_i$ , represents the collective unobservable influence of any omitted variables. If  $\beta$  values replace into the equation, the model can be defined. Flexibility of multiple regression ensures that the researcher examines the *truth* of the relationship based on the linearity relationship (Hair et al., 2005) which gives an insight into the inter-relationship between independent variables through the correlation matrix. In this research regression analysis was utilised to achieve the central objective of examining the relationship between the extent of the stock market as the dependent variable and other factors, in terms of economic reform programme, macro-economic reform and financial maturity as the independent variable. This analysis highlights the extent of each independent variable’s impact on the variation of stock market

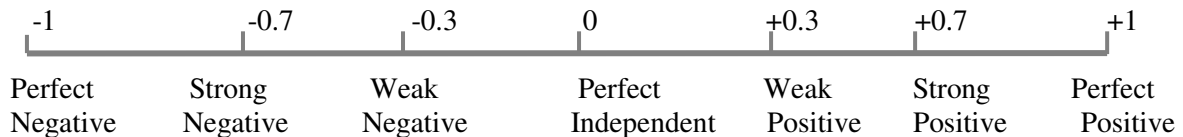


dependent variables. It seeks to determine whether or not the extent each variable can explain variation in the level of stock market performance in the Libyan economic situation.

#### 6.10.1.2.1.2 Correlation Statistics

Correlation analysis is used to describe the strength and direction of the linear relationship between two variables (Pallant, 2003). It is also employed to test the effect of moderator variables on the relationship or association between economic reform variables and stock market performance variables. The resulting statistic, called a correlation coefficient represented by ( $r$ ), is utilised since it gives a number between -1 and +1; a correlation of -1 or +1, which indicates a perfect correlation, negative, respectively, between two variables. Figure 6.8 illustrates a relationship between two variables.

**Figure 6.8 Values of the Correlation Coefficient**



Source: Saunders et al. (2007).

If the correlation coefficient ( $r$ ) is zero, then there is no relationship between variables, meaning that they are perfectly independent. But, if the probability ( $p$ ) of correlation coefficient ( $r$ ) value is significant (i.e.  $p \leq 0.05$ ), there is a significant relationship between the two variables and this is statistically meaningful. In contrast, Cohen (1992) suggested that a value of approximately 0.10 represents a small correlation, 0.30 a medium correlation and 0.50 or greater, a large correlation. Williams (1992) proposes the following values as guidelines for interpreting the significance of the correlation coefficient ( $r$ ), as shown in Table 6.7.

**Table 6.7 Values of Correlation Coefficient ( $r$ )**

Correlation Coefficient ( $r$ )	Descriptive	Interpretation
0.00-0.20	Slight	Almost no relationship
0.20-0.40	Low	Small relationship
0.40-0.70	Moderate	Moderate relationship
0.70-0.90	High	Marked relationship
0.90-1.00	Very high	Solid relationship

Source: Williams (1992).

According to Kohout (1974), interpreting Spearman's Rho correlation coefficient ( $r$ ), the ( $r$ ) values indicate the amount of *rank change* in the correlation of Y variable when the X variable increases by one rank. Moreover, because Spearman's Rho ( $r$ ) coefficient is

completed based on ranked data, it can be demonstrated that the  $(r)$  coefficient indicates the proportion of variation in  $Y - rank$  which is explained by variation in the  $X - rank$ . If the probability  $(p)$  of correlation coefficient value is significant (i.e.  $p \leq 0.05$ ), there is a statistically significant relationship between two variables. There is a simpler formula for calculating Spearman's Rho correlation coefficient  $(r)$ :

$$r_s = 1 - \frac{6 \sum d_i^2}{n(n^2 - 1)} \quad (6.2)$$

where  $n$  is the number of period ranks and  $d_i$  is the difference between period ranks of  $X - rank$  of  $Y - rank$  (i.e. a difference score). If there are no tied scores, Spearman's Rho correlation coefficient will be closer to the Person product moment correlation. Also note that the sum of squares from 1 to  $n$  can be expressed as  $n(n+1)(2n+1)/6$ .

#### 6.10.1.2.1.3 Chi-square-based Measures

Chi-Square ( $\chi^2$ ), or cross-tabulation, sometimes referred as contingency table, is adopted to assess differences between groups using nominal or ordinal variables (Hair et al., 2005). It allows for testing significance of differences between a set of observed frequency tables arranged such that each cell in the resulting table represents a unique combination of specific values of cross-tabulated variables. The resulting chi-square test for independence enables the researcher to test whether there is a significant association between two categorical variables (Field, 2005). So, if the  $p$ -value for the resulting person chi-square is less than 0.05, hypothesis of a correlation is accepted.

#### 6.10.1.2.1.4 Statistical Significance

Statistical significance ( $p - level$ ) refers to the degree of difference or association being tested that would only occur by chance alone (SPSS 2003) package. Rowntree (1991) has described the various levels of significance to identify the real difference between the means of two samples. If the observed significance level is small enough, usually less than 0.05 or 0.01, the null hypothesis is rejected ( $H_0$ ). Cooper and Schindler (2006) explained that type I error, which is sometimes referred to as alpha ( $\alpha$ ), indicates accepting the designed or alternate hypothesis when the null hypothesis is actually *true*. Type II error, sometimes referred to as Beta ( $\beta$ ), refers to accepting the null hypothesis when the alternate hypothesis is *true* (Figure 6.9). "It is therefore generally more important to minimise type I than type II errors", Saunders et al. (2007: 443).

**Figure 6.9 Type I and Type II Errors**

Chance of Making	
Type I error	Type II error
<i>Significance level at 0.05</i>	
Increased	Decreased
<i>Significance level at 0.01</i>	
Decreased	Increased

Source: Saunders et al. (2007).

Bearing this discussion in mind, this research sets  $p\text{-level} \leq 0.05$  as its significance level. Rationale for this choice is threefold:

- $(p\text{-level} \leq 0.05)$  is the accepted level when using the Statistical Package for the Social Sciences (SPSS 2003)
- $(p\text{-level} \leq 0.05)$  is proposed by many researchers, such as Hair et al. (2005) and Saunders et al. (2007)
- $(p\text{-level} \leq 0.05)$  is adopted by many previous related business researchers such as Kobrin (1982) and Yazid (2001).

The following test will be used to present and analyse the fourth research hypothesis H4 (see Chapter Nine) by using an econometric model to investigate the difference in determinants of financial market between Libya and emerging market countries from the data relating to the period over 1995-2006.

#### **6.10.1.2.2 Econometric Growth Model**

##### **6.10.1.2.2.1 Two-Stage Least-Squares (2SLS)**

This section discusses the process used to test the fourth research objective, which is presented in Chapter Nine. The Two-Stage Least-Squares (2SLS) approach was used to correct the endogeneity of independent variables, particularly the level of stock market development. Where the cross-country regressions suffer from three kinds of error, statistical, measurement and conceptual, statistical errors occur when regression analysis assumes that observations are drawn from the same population, whereas measurement errors occur when the variables are defined, collected and measured incorrectly across various countries. However, published data sometimes fail to capture the true picture. That means different countries appear in cross-country regression. Harberger (1987: 256) pointed out: “[...] regressions cross country do not resolve causal issues, nor do the regressions describe a single piece of machinery over time. They should be viewed as evaluating the strength of the partial correlation and not behavioural relationships that suggest how much growth will change when the right-hand-side variable changes. The results unearth suggestive empirical regularities and should not be

*interpreted as stylised facts or as behavioural relationships*". In consideration of the remarkable limitations of the cross-sectional method of studying growth, which is a truly dynamic concept, it can be argued that the results of empirical work by Atje and Jovanovic (1993), Harris (1997), Levine and Zervos (1996, 1998b) and Arestis et al. (2001) are subject to criticism and it is not true that the equation of causality is addressed satisfactorily in these studies.

Overall, as mentioned early in Section 6.5, despite the fact that the use of survey questionnaire together with econometrics models is unusual in the field of finance research, Michaelas (1998) argues that the use of the survey based analysis with mathematical techniques models may introduce a new research methodology in the financial market structure research, which can overcome some of the disadvantages inherent with each individual technique. This combination is sometimes called a 'triangulation method', which involves viewing the evidence from different angles or viewpoints (see for instance, Fielding and Fielding, 1986). Consequently, the combination of survey questionnaire and econometrics models can provide a significant contribution to the current understanding of financial market differences. The empirical work in this study uses a systematic combination of linear regression analysis models (Chapter Eight) and econometrics model (Chapter Nine).

### **6.10.2 Qualitative Data Analysis**

*In relation to the differences between the quantitative and qualitative research*, Rust (1993: 70) has argued that the difference between the techniques is based on the purpose of the analysis rather than the method of data gathering. While qualitative research answers the question of how things happen, quantitative research answers the question of how often things happen. However, qualitative research methods comprise interpretive techniques which seek to describe, decode, translate and explain the meaning, not frequency, of the phenomena in a social world (Van Maanen, 1983). Researchers are not bound by any particular methodology but rather use diverse tools and methods according to the requirement of problem resolution (Denzin and Lincoln, 2000). Qualitative research is most suitable when 'rich' information about a small number of subjects is needed, when a flexible or informal approach is desirable, or when members of the sample population involved are better researched by encouraging description and analysis of situations in their own words (Ticehurst & Veal, 2000).

Although different approaches are not mutually exclusive, they can be combined. It can be argued that the template analysis is the process of organising and analysing textual data according to themes. The data involved are usually interview transcripts, but may be any kind

of textual data. Template analysis involves the development of a coding ‘template’, which summarises themes identified by the researcher(s) as important in data set and organises them in a significant and useful manner<sup>28</sup>. Coding is the process of identifying where themes occur in accounts and attaching labels ‘codes’ to a section of text to index them (King, 2004). Related codes with only small amounts of data might be more appropriately merged into a single code (see Chapter Seven and Appendix K: Section K 5). Based on this discussion, template analysis statistics were used for the following reasons.

- Template analysis is, on the whole, a more flexible technique with fewer specified procedures, permitting researchers to tailor it to match their requirements (King, 2004: 275).
- To reduce large amounts of unstructured text to that which is relevant and manageable for the evaluation.
- To compare perspectives of different participant groups about their experience of the learning context.
- To make inferences about what is influencing participants’ communication and behaviour and the impact of their communication and behaviour.

The process of analysis of the qualitative data collected in the current study started when the researcher finished collecting the data. Taking into account the large amount of qualitative information, the process of interview transcription was carried out by the research without outsourcing this technical work. The major reason for this was that the interviews were conducted in Libya and often contained multiple expressions which might prove difficult for interpretation by non-native transcribers. Secondly, it was more logical to intertwine the interview data with the observation notes at the transcription stage to draw better conclusions on the subject of research. Condensing of the data was enhanced through thorough work on the fieldwork materials in printed and audio form. All the data were coded according to the generic corporate restructuring types, leaving space for new strategies which could occur during this research.

The data obtained from the interviews was processed and analysed using a number of steps. It started by listening carefully to the tapes and then transcribing them by writing down each participant’s response on a separate sheet of paper. Processing and analysing interviews normally takes time because the researcher needs to listen carefully to the tape recorder,

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<sup>28</sup> A “template” technique of analysis was described by Crabtree and Miller (1992), and the approach has been further developed by (King, 1998; 2004).

transcribe, read and re-read the data repeatedly (Drever, 1995). Therefore, the researcher read transcribed data accurately in order to identify the topic area related to the study aim. Each question's responses were put together and re-written on different sheets of paper so that all the answers to a particular question were together. Categories of the responses to each question were described in the form of broad themes, e.g. competitive strategies and relevant data was placed under each category. The responses were described in terms of the topics or categories and quotes were used to illustrate them. Ethical consideration suggested that all interviewees had to be coded in order to ensure confidentiality of the provided data (see Appendix J: Respondent Interviews). This was also useful in terms of the categorisation of the information in relation to different institutions. Once a final version of each transcript is defined and all transcripts have been coded to it, the template serves as the basis for the researcher's interpretation or illumination of the data set and the writing-up of findings. The analysis of the interviews is summarised in Tables K.5 and described in more detail in Appendix K, Section K.5.

## **6.11 SUMMARY AND CONCLUSION**

In order to achieve the research aim, distinct objectives were formulated and, in light of these, the main methodological approach has been detailed. In doing this, various methodologies available for researchers were discussed and justifications for employing the positivistic paradigm were provided. Since economic reform and stock market performance literature has enabled the researcher to define a theoretical framework and develop hypotheses, the deductive approach was selected. Among various strategies within this approach, the survey strategy was adopted since it is the most popular and commonly used strategy in business research. The chapter concluded with an explanation of the statistical methods framework used in this research. The results of the regression analysis were, then, merged with the results of the survey questionnaire in order to shed more light of financial as well as non-financial and behavioural issues that affect the Libyan stock market. The combination of different research methods in collecting and analysing data is one of the contributions of this study. A variety of statistics, differences and correlation statistics were applied after due consideration of the assumptions of each. The cross-country comparison stage exploited data from 42 developing countries including Libya. The result of this section was analysed and, subsequently, differences were highlighted in the financing model between the Libyan economy and other emerging financial markets. In addition, the result provided a framework of empirical knowledge which might be adopted in the current economic reform programme within the Libyan stock market performance.

After presenting methodological procedures implemented in the present study and various resources for data collection, the following chapters discuss the presentation of findings in this study arising from the research instruments which have been discussed in this chapter. This is displayed and discussed within the three main chapters which follow. Chapters Seven, Eight and Nine relate to the research aim and objectives. For example, Chapter Nine provides an empirical investigation analysis technique between the financing patterns of the developed Libyan stock market and other emerging economy markets to empirically test the final research hypothesis. The econometric growth model discussed in the current chapter will be examined in Chapter Nine. The next chapter (Chapter Seven) will provide the presentation of the findings from quantitative and qualitative data analysis by using the questionnaire survey and semi-structured interviews. Examination of the first three research hypotheses, tested by the linear regression analysis models for Libyan stock market, will be provided in Chapter Eight.

## CHAPTER SEVEN

### PRESENTATION OF THE FINDINGS

#### 7.1 INTRODUCTION

Having outlined the collection and preliminary screening processes in respect of the data in the previous chapter, the thesis now focuses upon the analysis of that data. Consequently, this chapter considers the data obtained from the self-administered questionnaires and from the semi-structured interviews, exploring the findings in accordance with the study's objectives which are concerned with providing an initial investigation into changes in the Libyan economy since the adoption of an economic reform programme in 1999 and the effect of this programme upon stock market performance. In order to discuss the results obtained from the questionnaire responses, *frequency* and *descriptive* statistics were used as a means of analysing the first part of the questionnaire survey. Findings in this respect are summarised and tabulated, leading to an initial *analysis* of the sample and results<sup>29</sup>. After the presentation of this information, a more *in-depth analysis* and *discussion* of issues involved in the findings obtained from both the questionnaire survey and the subsequent interviews (face-to-face semi-structured in nature) is offered. This enables an exploration of some of the research questions and provides more understanding. In presenting the findings, the chapter is divided into four main sections. Section 7.2 describes the data sources and analysis. Section 7.3 represents the general demographic analysis data. Section 7.4 deals with practices of the Libyan financial sector and economic characteristics. Thereafter, a summary and conclusion is provided in Section 7.5.

#### 7.2 DATA SOURCES AND ANALYSIS

##### 7.2.1 Primary Data Sources (Self-administered Questionnaires and Semi-structured Interviews)

The aim of this section is to present and analyse the primary data obtained from the use of self-administered questionnaires and semi-structured interviews to assess the relationship between the independent and dependent variables<sup>30</sup>. Each interview lasted between 30 and 60 minutes and all interviews were tape-recorded and later transcribed. The strategy was to begin

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<sup>29</sup> The rationale and assumptions of using each statistic are discussed in Chapter Six: Section 6.10.

<sup>30</sup> In the next chapter, a linear regression model is provided to test the relationship between these variables.



with broad questions and then, as the interviews progressed, to concentrate more on the research objectives. During the process the interviewees were encouraged to expand on any point they considered relevant and/or important.

### **7.2.2 Data Analysis**

The data collected from the self-administered questionnaires and semi-structured interviews at the research site were analysed in the light of the research framework. Each question and interview was analysed and the significant issues raised were identified. Statements representing these issues were also summarised and listed. Furthermore, the main concepts highlighted by each question and interview were used as key points.

## **7.3 GENERAL DEMOGRAPHIC ANALYSIS**

Discussion of the general background of respondents, as revealed in the demographic questions, offers a clear perspective of Libyan economic issues gathered in the initial part of the questionnaire survey (Appendix G: Section A). The data was collected in order to discover whether the response of the sample population was representative of ideas about the Libyan economic reform programme and performance of stock market. It was also collected to explain, in some detail, the concepts and percentages frequently utilised in the data analysis. Other statistical tables and figures are located in Appendix K.

### **7.3.1 Sample Description Characteristics**

As discussed in Chapter Six, a total of 330 questionnaires were distributed, of which 205 were returned (a response rate of 61.9 *per cent*). Of these, two were unusable giving a number of 203 (61.6 *per cent*) usable questionnaire responses. Non-responses numbered 125 (38.1 *per cent*) (see Chapter Six: Subsection 6.8.2.1.3, Response Rate). Table 7.1 compares the responses and non-responses of the sample for each group (capital market, currency market, private sector, public sector, financial sector and financial institution) and the eventual sample size as a result of non-responses. The survey population consists of people believed to be familiar with economic reform and financial markets. This includes those who might have professional and technical ability in the economic reform field, those who are expected to be involved in one way or another in stock market performance in the Libyan economy and those who might assist in change. Such a heterogeneous group has been surveyed in previous studies relating to economic reform programmes, macro-economic reform, financial maturity and stock market performance.

**Table 7.1 Distribution of Responses by Sample Size of Population Groups**

Groups	Responses		Non-responses	
	Frequency	Percent	Frequency	Percent
Capital Market (CLM)	49	24.1	19	15.2
Currency Market (CYM)	43	21.2	27	21.6
Private Sector (PVS)	41	20.2	28	22.4
Public Sector (PCS)	38	18.7	22	17.6
Financial Institutions (FLI)	32	15.8	29	23.2
<b>Total</b>	<b>203</b>	<b>100.0</b>	<b>125</b>	<b>100.0</b>

Source: Analysis of questionnaire survey data.

### 7.3.2 Characteristics of Respondents

This section describes the characteristics of the sample, consisting of general managers, senior managers and employers from other financial institutions. Appendix K contains tables and figures showing how these characteristics have been broken down into six main groups: gender, age, education levels, academic background, current position and work experience.

#### *Gender and Age*

Appendix K, Table 1.1 indicates the demographics for each of the capital market and groups. These groups have a gender distribution of approximately 75.6 *per cent* male, with the exception of the public sector group, which was 42.1 *per cent* female. The sample was biased towards the higher ratio of 40 *per cent* aged between 41 and 50 years. Among the youngest participants, 10 *per cent* were aged under 30 and 35 *per cent* were aged between 30 and 40, followed by 17 *per cent* who were aged between 51 and 65. The group sample sizes were not equal. The average age of participants was 45. Nonetheless, multivariate analysis of covariance allows for differences in group size (Hair et al., 2005). A higher ratio of managers belonging to the older age group, between 41 and 50, was found in the Currency Market group with prior experiences, followed by the Capital Market group (39 *per cent*).

#### *Education Levels and Academic Background*

Appendix K, Table 1.2 illustrates that the majority of respondents in the groups (63.2 *per cent*) held a Bachelor's degree, mostly in business and related science. 30.2 *per cent* of the participants from the Currency Market group held a Master's degree and 18.4 *per cent* from the Capital Market group were PhD-holders. These results suggest that most respondents had achieved reasonable levels of education, and hence, would be able to discuss their problems and provide clear opinions about their knowledge. The findings are supported by an empirical survey conducted by Porter and Chairman (2006) that documented literacy levels in the Libyan education system as being significantly high, and among the highest in the MENA countries, at 82 *per cent*, with youth literacy reaching 100 *per cent* and female literacy considerably better than in many MENA countries. Appendix K, Table 1.3 shows that a high

percentage of respondents held a degree in accounting and finance (38.8 *per cent*). The second highest percentage (20.9 *per cent*) held degrees in banking. Management and marketing degrees were held by 36.8 *per cent*, and 28.1 and 12.5 *per cent*, respectively, were in economics and business studies.

### ***Current Position and Work Experience***

Appendix K, Table 1.4 displays a numerical overview of the types of job held by all managers. Administrative managers accounted for 38.8 *per cent* of the sample, human resource managers 35 *per cent* and public relations managers 24 *per cent*. General and senior managers accounted for 22 *per cent*. Responses to the questionnaire suggest that respondents do not switch careers frequently. Appendix K, Table 1.5 shows that approximately 70.9 *per cent* of the participants had more than 10 years of work experience. Average duration of work experience in the capital market, currency market, private sector, public sector and financial institution groups, respectively, was 20, 17, 14, 13 and 10 years. Fewer than 9.9 *per cent* of the sample possessed less than three years' experience.

### **7.3.3 The Characteristics of Participants' Companies**

The main purpose of this section is to provide a brief outline of the companies' characteristics. It covers seven main features: bank category, employee numbers, ownership, size, current market region, industry and company revenue.

#### ***Bank Category and Employee Numbers***

Appendix K, Figure 1.1 presents the Libyan banks classified into five main categories, as participants from commercial banks represented the majority of the sample (76). Almost all commercial and private banks participated in this study, representing 37.4 *per cent* and 22.2 *per cent*, respectively, while other foreign and investment banks accounted for 14.8 *per cent* and 15.8 *per cent* of the study's participants. Appendix K, Figure 1.2, demonstrates that 24.1 *per cent* believed that their capital market employed fewer than 850 people because it had only started in recent years. The current market employed over 3,210 employees, while the private sector employed, on average, between 851 and 1,340 people. The public sector had 18.7 *per cent* of 2,106-3,210 employees, and the fifth group had, on average, 1,341-2,105 employees. Following Khalifa and Aspinwall (2000), the researcher classified companies in two main categories by size: large companies with 100+ employees and small companies with less than 100 employees.

### ***Ownership***

Allocating the responses according to type of ownership, as outlined in Appendix K, Figure 1.3, indicates that the sample consists of 95 public (state-owned) companies (46.8 *per cent*) and 108 privately-owned companies (53.2 *per cent*) in various industries. The Chi-square test confirmed significant differences among company ownership in terms of public and private. Two main reasons lie behind the growth in the number of companies during the last few years.

- The benefit from the increased oil boom of the late 1970s to mid-1980s and between 2003 and 2007: these periods were considered as higher economic growth periods (Appendix A, Section A 1.2: Growth and Structure of the Libyan Economy)
- The economic reform programme, which started in 1999 and aimed to liberalise and modernise the Libyan economy (Appendix A, Section A.1.2: Growth and Structure of the Libyan Economy).

### ***Size and Current Market Region***

Respondents were divided into five groups depending on the company's total assets in million LD. Appendix K, Figure 1.4, illustrates that there are 84 small companies of less than 10 million LD (23.2 *per cent* of respondents), 47 large companies (more or = 30 million LD - 41.4 *per cent* of respondents), the remainder being medium-sized companies (10-30 million LD - 35.5 *per cent* of respondents). As shown in Appendix K, Figure 1.5, most markets are local, accounting for 50.7 *per cent*. The explanation for this high percentage was the Libyan economy's closed door policy prior to 1992. Regional markets represented 20.2 *per cent*, local and regional 15.3 *per cent*. For instance, the Libyan market operates within North African countries. The lowest percentage was that of the international market, at 13.8 *per cent*. This can be explained in two ways. Firstly, the government's policy encourages the establishment of local companies rather than regional or international companies. Secondly, the Libyan economy is relatively poor in the international marketplace and, therefore, it is unable to compete (Awamleh, 2002).

### ***Industry and Company Revenue***

Allocating responding companies according to industry classification, as shown in Appendix K, Figure 1.6, reveals that manufacturing and mining constitutes 24.1 *per cent* of the sample, while non-manufacturing constitutes 75.9 *per cent*. Antoniou et al. (2002) argued that

manufacturing and non-manufacturing<sup>31</sup> companies have few differences among their assets' structure and their degree of weakness *vis a vis* changes in capital markets. For this reason, factors that may affect capital market decisions may differ in these two sectors. Allocating the responding companies according to a company's percentage of revenue in terms of income, as displayed in Appendix K, Figure 1.7, reveals that 36.7 *per cent* of samples are low income, 22.7 *per cent* are medium-income and 40.4 *per cent* are high-income, which can additionally be regarded as high-productivity.

#### **7.4 PRACTICES OF THE LIBYAN ECONOMIC CHARACTERISTICS**

The aim of this section is to *present* and *analyse* data obtained from both a self-administered questionnaire survey and semi-structured interviews regarding research objectives relating to the process of Libyan economic reform and stock market performance factors, including financial maturity and macro-economic reform variables. The analysis of the general results about Libyan economic activity and Libyan businesses is discussed according to the following sequential steps. In order to conduct the necessary calculations and cross-references required for tabulation, data was entered into an *SPSS* 2003 package. Closed questions used a 5-point scale "Likert scale"<sup>32</sup> to illustrate disagreement and agreement factors. These were summarised using numerical values of the scale running from 1 "strongly disagree" to 5 "strongly agree". The tables and all other statistical figures are located in Appendix K for clear presentation.

The section is divided into four main subsections. Subsection 7.4.1 deals with the economic reform programme independent variables, while subsection 7.4.2 illustrates macro-economic reform independent variables. Financial maturity independent variables are discussed in subsection 7.4.3. Subsection 7.4.4, which concludes the chapter, deals with stock market performance dependent variables.

##### **7.4.1 Economic Reform Programme Independent Variables**

This group of variables covers the second part of the questionnaire survey (Appendix G: Section B) and some interview questions (Appendix K). Fulfilment of economic reforms led to the transformation of the social economy into a market economy within the Libyan context.

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<sup>31</sup> Akbar (2001) defines manufacturing companies as those which produce goods, items for use and trade, skills and resources, and non-manufacturing companies as those involved in transportation, finance, insurance and the service industry.

<sup>32</sup> The rationale and assumptions of adopting a 5-point scale "Likert scale" were discussed in Chapter Six: Subsection 6.8.2.1.2.2.

Deregulation, corporatisation, privatisation, liberalisation of prices, trade and capital movement were among the main supports of the transformation. This section focuses on the relationship of Libyan economic reform programme independent variables. It was critical to determine the approach to the deregulation framework in the Libyan economy and discover the identity of corporatisation, privatisation and liberalisation.

#### 7.4.1.1 Deregulation

##### *Questionnaire Findings*

Questionnaire respondents were presented with a list of eight questions concerning deregulation and were requested to rate degrees of concern on a 5-point rating scale. The average of the Likert scale is 3  $((1+2+3+4+5)/5)$  and hence, a *mean* above 3 shows an agreement with the statements while a *mean* below 3 shows overall disagreement. Based on the *means*, *skewness* and *kurtosis*<sup>33</sup>, the output of tests, as presented in Table 7.2, indicates similarity among some means, for example, ‘Regulation stability encourages companies to invest in the stock market’ (*mean* 4.29, *Skewness* -1.82, *Kurtosis* 2.13) and ‘The laws of the stock market assist in promoting investment in the capital market’ (*mean* 4.16, *Skewness* -1.55, *Kurtosis* 2.08). These results referred to the regulatory and institutional environment that helped to define the development stage of the stock market in order to secure a successful movement towards the new markets. This movement involved activities such as encouraging private ownership of economic activities, reducing the role of the state to be limited to some public activities such as health, education and security, and privatising state-owned interests and liquidating unprofitable business units. This is consistent with the argument proposed by La Porta et al. (1997) that the legal environment influences the size of the capital market, which, in turn, affects capital structure decisions. In this regard, La Porta et al. (1998) state that the legal protection to investors, which includes the content of the law and the quality of its enforcement, is one of the most significant treatments to mitigate agency problems.

The statement: ‘The laws of the stock market play a crucial role in limiting the value of companies’ shares’ (*Mean* 4.01, *Skewness* -1.30, *Kurtosis* 1.21) was ranked lowest and, therefore, these laws were considered the least important source of deregulation of those listed. The loss of market share and poor financial performance were the catalysts of change, which

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<sup>33</sup> Skewness values within the range of -1 to +1 and Kurtosis values within -3 to +3 indicate an acceptable rate for normality, whereas values decreasing outside the range of Skewness and kurtosis indicate a substantial exit from a normal distribution. The rationale and assumptions of using *Skewness* and *Kurtosis* were discussed in Chapter Six: Subsection 6.10.1.1.2.

could be due to the change in the organisational strategic goals in the state regulations and/or the increase in market competition. Respondent L supports this result saying: *“The deregulation of the economy has negatively affected the company’s performance. The worst impact was made by the change in the foreign currencies exchange rates in 1999, which has increased the production costs”*. The overall mean of 4.11 indicates the respondents’ agreement with the statements in relation to the deregulation factors and the application of the economic reform programme.

**Table 7.2 Descriptive Statistics for Deregulation**

Code	Rank	Statements	Valid N=203			
			Means <sup>a</sup>	SD	Skewness	Kurtosis
B.1	3	Economic reform is an important factor in the regulation of the stock market	4.1429	0.98719	-1.569	2.375
B.2	4	Regulation of the stock market is good for investment	4.1232	1.00474	-1.403	1.662
B.3	1	Regulation stability encourages companies to invest in the stock market	4.2857	0.87152	-1.815	2.133
B.4	2	The laws of the stock market help to promote investment in the capital market	4.1626	1.02840	-1.545	2.077
B.5	6	Regulation is an important element to market and promote investment for the stock market	4.0542	1.07262	-1.324	1.161
B.6	5	Regulation tools contribute to improvement of the stock market	4.0985	1.06713	-1.482	1.676
B.7	8	The laws of the stock market play a crucial role in limiting the value of companies’ shares	4.0099	1.06701	-1.304	1.213
B.8	7	Simplified procedures affect investment in the stock market	4.0394	1.03810	-1.259	1.155

Notice a: The percentage of respondents who scored 4 “agree” and 5 “strongly agree”.

Source: Analysis of questionnaire survey data.

### ***Interview Findings***

Managers interviewed in the financial institutions were asked about change in the financial deregulation context. Since interviewees were not required to rank in order or rate the aspect, the relevant measure was simply the number of times any given deregulation was mentioned. One financial regulations manager said:

*“The deregulation structure policy of the Libyan economy is shaped by the following deregulation objectives: creation of appropriate measures for investor protection; support for a truthful and competent financial services sector and industry; control and monitoring of systemic risk, supervision of management risk in deregulation firms, and the assurance of consistency of deregulation with international standards, and to support the government’s competitive position in the financial market”* (Respondent L).

Interviewees were further required to explain concerns relating to the deregulation framework of the Libyan economy. Respondent F indicated that, firstly, this framework had allowed foreign products and investments to penetrate the Libyan market which, in turn, caused a decline in the companies’ domination of the market in respect of their products. Secondly, it had terminated the special foreign currencies exchange rates assigned to the state-owned companies, thereby causing a fivefold increase in the cost of materials and foreign labour within a year (see Subsection 7.4.2.2: Exchange Rate). Consequently, product prices have increased, which has placed both companies in a weaker competitive position and caused

deterioration in their financial performance. Many managers gave specific responses, however, regarding deregulation and the legal framework governing the work of the basic components operating in the financial market, brokers, shareholders and bonds.

#### **7.4.1.2 Corporatisation**

##### ***Questionnaire Findings***

Respondents to the questionnaires were presented with six questions concerning potential corporatisation processes and were requested to rate degrees of concern, in relation to the economic reform programme, on a 5-point rating scale. The corporatisation factors all had a *mean* score of 4 or above which contributed to development of the stock market by increasing the number of private companies as presented in Table 7.3. In descending rank order of concern the results are: ‘Managers of corporate companies play a crucial role in encouraging prospective customers to invest in the market-based economy’ (*mean* 4.24, *Skewness* -1.46, *Kurtosis* 3.12), as during the economic transition capital structure, decisions are governed by managers’ preferences, perceptions and beliefs towards external finance as business develops and more funds are needed (Michaelas, 1998). The second highest ranking is: ‘The corporatisation of companies plays a vital role in contributing to the stock market’ (*mean* 4.22, *Skewness* -1.70, *Kurtosis* 3.31). This finding mirrors that in 1992, when the government passed Act number 9 of 1992 to enhance and regulate the private sector activities in the nation. The Act permits the establishment of private business activities owned and managed by families and individual entrepreneurs. It also allows the selling of publicly-held companies to private investors, which has resulted in the emergence of some private companies. According to this Act, the state needs to transfer its role as sole owner to that of a shareholder with limited liability and limited responsibility in order to fully privatise the state-owned companies. This was followed by statements concerning the importance of different strategic targets for the future of the firm. The highest mean was for ‘Providing job opportunities’ (*mean* 4.17, *Skewness* -1.47, *Kurtosis* 2.56) which was followed by ‘Increasing profitability’ (*mean* 4.16, *Skewness* -1.61, *Kurtosis* 2.85). Bevan and Danbolt (2002) explained this finding in that the more profitable firms should hold less debt, because high levels of profits provide a high level of internal funds. The average mean in the whole section is 4.14, which indicates overall agreement with the corporatisation statements.



**Table 7.3 Descriptive Statistics for Corporatisation**

Code	Rank	Statements	Valid N=203			
			Means <sup>a</sup>	SD	Skewness	Kurtosis
B.9	3	Corporatisation is an important factor in a market-based economy	4.1478	0.94807	-1.462	2.316
B.10	2	The corporatisation of companies plays a vital role in contributing to the stock market	4.2217	0.93614	-1.700	3.314
B.11	5	Public sector assigns laws for endorsing investment in the stock market	4.0148	1.03157	-1.150	0.853
B.12	4	The Libyan government encourages corporate companies to invest managers in the stock market	4.1133	0.98603	-1.450	2.058
B.13	1	Managers of corporate companies play a crucial role in encouraging prospective customers to invest in the market-based economy	4.2414	0.81803	-1.459	3.119
B.14		The following strategic targets are important for the future of the firm:				
B.14.1	1	Providing job opportunities	4.1724	0.90915	-1.466	2.561
B.14.2	5	Providing domestic market goods and services	4.0345	1.04066	-1.320	1.471
B.14.3	2	Increasing profitability	4.1626	0.96379	-1.605	2.853
B.14.4	4	Repaying borrowing	4.1478	0.92160	-1.372	2.161
B.14.5	3	Expanding the firm	4.0936	1.04176	-1.436	1.766

Notice a: The percentage of respondents who scored 4 “agree” and 5 “strongly agree”.

Source: Analysis of questionnaire survey data.

### ***Interview Findings***

Respondents interviewed in the companies were requested to indicate techniques they most relied on in corporatisation programmes involved in their economic reform. As interviewees were not required to tick or rate a pre-formulated written set of answers, the relevant measure was the number of instances where any given technique was mentioned. Much of the evidence from the interviewees supports the findings of the questionnaire. One financial manager explained that the main aim behind the introduction of the corporatisation programme was to encourage the workers to take control in both the state-owned and private enterprises in which they worked. Based on this encouragement, the ownership of many private companies was changed in 1979 such that they became state-owned. Respondent H stated that, *“By the end of 1981, with the exception of the agriculture sector, all private ownership in Libya was abolished, housing ownership was restricted to one house per family, business enterprises were replaced by government agencies, and workers took over private and public factories”*. Despite this evidence supporting the questionnaire data, there were some responses which contradicted the argument that the running of enterprises by workers made effective management almost impossible and enterprises had no clear role in the economy, since workers’ committees rarely accepted economic efficiency or profitability as valid objectives Respondent I.

#### ***7.4.1.3 Privatisation***

### ***Questionnaire Findings***

Questionnaire respondents were presented with a list of ten questions concerning the potential privatisation processes, and requested, with reference to the economic reform programme, to

rate degrees of concern on a 5-point rating scale. Some similarities based on the *mean* of the privatisation score, as presented in Table 7.4, occurred but generally the results varied between attracting high and moderate interest. In highest place was: 'The private sector can co-operate with stock market authorities to increase competitive advantages' (*mean* 4.24, *Skewness* -1.61, *Kurtosis* 2.99). The next highest rank was given to: 'The privatisation moves of the Libyan economy towards a stock market' (*mean* 4.24, *Skewness* -1.57, *Kurtosis* 3.25). This finding is in line with the view suggested by Bekart et al. (2002) who argued that the stock market can also play a significant role in the planned privatisation of the public sector by evaluating the stock of public sector enterprises offered sale, providing funds necessary for investors in stocks, providing hire purchase funding for the small investor and transforming part of the debt of public sector enterprises into equity shareholding. This will rectify financial structures and enable the promotion of these organisations' shares when they are offered for sale, as well as assisting in the establishment of investment funds in stock and widening ownership of shares.

The third highest ranking was: 'Privatisation transforms the economy from a socialist to a market economy' (*mean* 4.22, *Skewness* -1.57, *Kurtosis* 2.99). By way of illustration, the General People's Committee resolution number 300 in 1993 recommends that joint enterprises could be sold to the private sector. During 1993 and 1997, 124 state-owned business units were privatised, about 10,250 collective-ownership companies were established in different sectors (Alsharif, 2002) and many companies were liquidated or merged with other companies (Alsharif, 2000). Alfaitori (2004) describes the state's role at present and in the forthcoming stage as being to transfer the state-owned sector into the private sector, motivate the private sector and monitor the overall economy. He demonstrates that 361 state-owned enterprises were listed for privatisation before 2008 in a three-stage-plan (261 enterprises by the end of 2005, 46 by the end of 2007, and 54 by the end of 2008). However, Binyon (2005) reports that only 48 state-owned firms were privatised in 2004 out of the 360 listed for privatisation before 2008. These findings suggest that, first, privatisation is expected to reduce the financial burden on the government budget caused by regular subsidies to public sector enterprises. By releasing scarce financial resources, the government will be able to increase investment allocations to sectors that directly benefit the poor, such as education, nutrition and health. Secondly, privatisation will improve the efficiency of public sector enterprises, which have not only been performing poorly, but have also been highly resistant to change despite almost continuous reform efforts. Finally, privatisation will bring in the investment resources needed

for the modernisation of the public sector. An overall average of 4.09 is recorded indicating that the respondents agreed with the privatisation programme statements.

**Table 7.4 Descriptive Statistics for Privatisation**

Code	Rank	Statements	Valid N=203			
			Means <sup>a</sup>	SD	Skewness	Kurtosis
B.15	5	Private sector is important in strengthening the corporate market	4.0887	1.06335	-1.426	1.569
B.16	7	Privatisation is a new term in the stock market	4.0493	1.11139	-1.278	0.978
B.17	2	Privatisation moves the Libyan economy towards a stock market	4.2365	0.85784	-1.569	3.254
B.18	3	Privatisation transforms the economy from a socialist to a market economy	4.2217	0.89836	-1.570	2.986
B.19	10	Privatisation of commercial banking sector	3.8522	1.17643	-1.073	0.258
B.20	9	Your company encourages you to borrow money for a business deal as long as it is profitable	3.9015	1.00992	-1.053	0.732
B.21	4	The Libyan government motivates the private sector to invest in the stock market	4.1675	0.91820	-1.424	2.342
B.22	6	Privatisation is the real reason for contribution of productivity growth	4.1576	0.93065	-1.473	2.527
B.23	8	Technology tools such as internet telecommunications are crucial in the privatised system	4.0099	1.08541	-1.286	1.139
B.24	1	The private sector can co-operate with stock market authorities to increase competitive advantages	4.2414	0.90972	-1.613	2.989

Notice a: The percentage of respondents who scored 4 “agree” and 5 “strongly agree”.

Source: Analysis of questionnaire survey data.

### ***Interview Findings***

Respondents interviewed within companies were asked to indicate the techniques they most relied upon in the privatisation programme involved in their economic reform. Since interviewees were not given a pre-formulated written set of answers, the relevant measure was the number of times any particular use was mentioned. Respondent G indicated that the Libyan government planned to privatise 361 companies by the end of 2007, and that to date more than 260 companies, with a value greater than 2 billion LD, had gone through the privatisation process. However, the government introduced significant companies, such as cement, iron and steel mills, feed, Libyan insurance and five new private commercial banks: Aman Bank for Commerce and Investment, Alijmae Alarabi Bank, Wafa Bank, Waha Bank (owned by the Sahil and Sahara Bank) and Weheda Bank. Nonetheless, the owners of these institutions were witnessing a reluctance to purchase their shares by citizens (Respondents E and H). Presently, the private sector constitutes about 35 *per cent* of Libyan economic activities (Respondent I). Libyan citizens paid a heavy price for the economic liberalisation policy because of the large gap between private and public sectors and the extent of the pervasive phenomenon of corruption (Respondent G). These findings suggest a need to: (1) facilitate the transformation from the public to the private sector by formulating appropriate policies to deal with the problems associated with this transformation; (2) motivate the private sector to invest in new projects as a means to decrease the number of unemployed people, (3) assist the process of reform by correcting certain policies and proceedings regarding protection, supervision and control.

#### 7.4.1.4 Liberalisation

##### *Questionnaire Findings*

Questionnaire respondents were presented with five questions concerning potential liberalisation processes and requested to rate their degrees of concern regarding the economic reform programme on a 5-point rating scale. Based on the *means* of the liberalisation score, as presented in Table 7.5, the issues that concerned the respondents the most were: ‘Liberalisation may affect specific components of capital flows including debt (financial and non-financial borrowing and lending), equity (portfolio) investment in stock markets) and foreign direct investment’ (*mean* 4.17, *Skewness* -1.41, *Kurtosis* 2.23). The underlying argument for this reform is that the government has realised that greater opening of the stock market to foreign investors has many benefits<sup>34</sup>, representing an opportunity to attract foreign capital to finance economic growth. By raising the demand for shares on the stock market, foreign investment liberalisation also lowers the cost of capital for local firms and adds to their incentives for going public which, in turn, makes the market more liquid and efficient and increases the market size. This, in turn, increases local investors’ opportunities for portfolio diversification, which raises their incentive to invest in shares.

The second highest ranked concern was: ‘Liberalisation restricts movement of product and factor flows across borders involving goods, services, investment, financial capital, technology and labour’ (*mean* 4.16, *Skewness* -1.51, *Kurtosis* 3.39). As mentioned early in Chapter Two, during the 1970s and 1980s, the Libyan economy had been dominated by the state-owned sector. This domination had led to major economic crises that prompted the government to open the door to the private sector and start a policy of privatising a large number of state-owned companies (Bait-Elmal, 1999). Alsharif (2000) demonstrates that, since the late 1980s and early 1990s, a number of laws and resolutions have been issued, aiming to transform the Libyan economy from a centrally planned system to a more productive and flexible market-based economy by encouraging the private sector and reducing the role of the state to limited involvement in some public activities such as health, education and security, by privatising the state-owned companies and by giving priority to those projects that use domestic raw materials. An overall mean of 4.08 gives an indication that the whole section is agreed.

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<sup>34</sup> For more a detailed discussion of the benefits of opening the stock market to foreign investors see, for instance, Bekaert and Harvey (2000); Bekaert et al. (2000); Hargis (2000) and Kim and Singal (2000).

**Table 7.5 Descriptive Statistics for Liberalisation**

Code	Rank	Statements	Valid N=203			
			Means <sup>a</sup>	SD	Skewness	Kurtosis
B.25	5	Liberalisation of trade and investment regimes as well as deregulation and privatisation of government business activities generate opportunities for expansion of trade investment and technology flows	3.9606	1.08929	-1.151	0.819
B.26	2	Liberalisation restricts the movement of product and factor flows across borders involving goods, services, investment, financial capital, technology and labour	4.1645	0.95520	-1.512	2.391
B.27	3	Liberalisation has led to a lower cost of transactions and global business improvements in transport, communication and information technology networks	4.0936	1.06059	-1.370	1.467
B.28	4	Rapid liberalisation (dismantling and lowering of tariff/non-tariff barriers) and deregulation, both at national and international levels, aids trade	4.0345	1.06417	-1.364	1.475
B.29	1	Liberalisation may affect specific components of capital flows including debt (financial and non-financial borrowing, and lending), equity (portfolio investment in stock markets), and foreign direct investment	4.1724	0.92535	-1.410	2.228

Notice a: The percentage of respondents who scored 4 “agree” and 5 “strongly agree”.

Source: Analysis of questionnaire survey data.

According to the CBL, during the period 2001-2006, several steps related to monetary policy and aimed at achieving general price level stability and maintaining the banking system were taken. Beginning in 2002, after unification of the exchange rate, many procedures and operations in respect of monetary policy control were revealed as constraints on current operations and personal purposes related to foreign currency. Libya accepted the provisions of Article Eight of the IMF agreement related to liberalisation of the current account of operations and did not impose any restrictions upon it.

### ***Interview Findings***

Respondents interviewed in the liberalisation programme were requested to detail techniques involved in their economic reform. As they were not asked to tick or rate a pre-formulated written set of answers, the relevant measure was the number of times any given technique was mentioned. The financial and monetary authorities have several procedures and significant changes have had positive effects upon the whole economic arena in achieving vital steps for stability and payment of the liberalisation reform programme. These steps are: standardisation of the LD exchange rate and the consequent effect of correcting the distorted cost of many goods and services (Respondent A); the passing of new laws to regulate banking work, strengthening the role of the CBL and opening banking sector policy to domestic and foreign competition (Respondent E); simplification of procedures for customs tariffs, divided into two rates, 10 *per cent* for tobacco products and zero *per cent* for all other products, with subordination of all goods imported to new charges named “service fees” rated at 4 *per cent*. This fee or tax increased production and consumption of between 25 and 50 *per cent* on imported goods and reduced to 2 *per cent* for goods produced locally (Respondents C and D).

To summarise, all the data which has been presented and discussed previously was collected by a questionnaire built on a 5-point Likert scale. The collected data identifies that the highest rank was gained in respect of corporatisation with a mean of 4.13, while the lowest level was recorded for liberalisation with a mean of 4.08 which could be a reasonable sign that there is a clear understanding of the value of economic reform programme factors. The finding is in line with the related literature. It can be argued that the economic reform programme was motivated by different factors, each of which has combined with the others, to initiate the need to develop the Libyan stock market. These findings show that, to a very great extent, the deregulation of the economy is considered as the most influential factor affecting the economic reform programme. Thereafter came other issues like the need for more economic liberalisation, the impact of other reform via privatisation through public share offerings which can also spur the development of stock markets, directly through higher equity valuations and trading liquidity and indirectly through increasing opportunities for portfolio diversification, accelerating the development of an institutional framework, and increasing investors' confidence.

#### **7.4.2 Macro-economic Reform Independent Variables**

This group covers the third part of the questionnaire survey (Appendix G: Section C) and some interview questions (Appendix K). The aim of this section is to *present* and *analyse* data related to macro-economic reform and financial conditions for developing a stock market within the framework of the Libyan economic context. These independent variables include interest rates, exchange rates, inflation rates, budget deficit, per-capita income and real GDP growth rate in Libya's economy.

##### **7.4.2.1 Interest Rate**

##### ***Questionnaire Findings***

Respondents to the questionnaires were presented with five statements concerning the interest rate and were required to tick those which they felt were relevant to macro-economic reform in Libya. The findings are presented in Table 7.6, from which it can be seen that the statement: 'Interest rates affect the stock market' was ranked most relevant (*mean* 3.89, *Skewness* -1.01, *Kurtosis* 0.30) with the second highest being: 'Interest rate liberalisation' (*mean* 3.85, *Skewness* -0.96, *Kurtosis* 0.14). These findings may indicate the effect of Law no.16 in 2004 related to reducing the minimum interest rate on loans and credits granted for productive purposes from 7.0 to 3.0 *per cent*. Additionally, law no.15 in 2005 related to cutting the

interest rate given by the CBL on commercial bank deposits with the bank from 2.5 to 1.7 *per cent* in order to encourage them to seek other domestic investment and finance areas that aid the achievement of desired economic growth. In developing countries, as McKinnon (1973) argues, governments should use appropriate policy in the domestic capital market to achieve economic growth. Raising the rate of interest to equilibrium level is known to play an important role in improving quality and the quantity of investment.

The statement: ‘The policy of interest rate’ (*mean 3.44, Skewness -0.38, Kurtosis -1.01*) was ranked lowest and, therefore, policy was considered the least important source of interest rate factors of those listed. It can be argued that the policy of fixing interest rates suffered from a major problem, that the interest rates were set regardless of the rate of inflation prevailing in Libya and, in most cases, they were below the prevailing inflation rates. This led investors to look for a quick profit by investing in unproductive projects. As a result, the policy of investing in long-term to short-term projects, i.e. trade, real estate and the housing sector, emerged. In early 2006, the CBL took the first step towards liberalising the interest rate by floating interest rates on deposits. Overall, a mean of 3.73 is recorded, showing that there is agreement of the interest rates statements.

**Table 7.6 Descriptive Statistics for Interest Rates**

Code	Rank	Statements	Valid N=203			
			Means <sup>a</sup>	SD	Skewness	Kurtosis
C.1	5	The policy of interest rate	3.4384	1.28198	-0.381	-1.009
C.2	4	When interest rates increase, the required rates of return will increase, then stock prices will decrease	3.6946	1.22083	-0.748	-0.380
C.3	1	Interest rates affect the stock market	3.8916	1.12491	-1.007	0.304
C.4	3	The flow of money depends upon the interest rate either to the stock market or the banking sector	3.7980	1.17465	-0.859	-0.105
C.5	2	Interest rate liberalisation	3.8473	1.16097	-0.963	0.140

Notice a: The percentage of respondents who scored 4 “agree” and 5 “strongly agree”.

Source: Analysis of questionnaire survey data.

### ***Interview Findings***

Bank managers who were interviewed were also asked where they obtained the techniques involved in their macro-economic reform initiatives. As interviewees were not required to tick or rate a pre-formulated written set of answers, the relevant measure was the number of instances where any given technique was mentioned. The interview findings confirm those obtained from the questionnaires. The general manager of the Central Bank explained that partial liberalisation of the interest rate was considered as significant, where interest rates had been consolidated on deposits with CBL. In addition, there was the cancellation of multiple interest rates on bank loans now applied by the CBL (Respondent A). More specifically, the liberalisation of interest rates has been on deposits with commercial banks (Respondent E).

Interviewees were additionally required to disclose reasons for relying on particular techniques. There is much deregulation but, despite this, a number of laws have been introduced by the CBL related to interest rates. For instance, Resolution no.16, 2004 concerned a reduction in the maximum rate of interest on loans and credit facilities for productive purposes from 7.0 to 3.0 *per cent*, which represented citizens and encouraged the public sector to borrow from banks to finance their productivity (Respondent A). Resolution no.15 in 2005 related to cutting the interest rate granted by the CBL on commercial bank deposits from 2.5 to 1.75 *per cent*, urging them to seek other areas of investment and financing local aid to achieve desired economic growth (Respondent A). Resolution no.36 of 2005 related to the liberalisation of credit interest rates (on deposits) and allowed negotiations between banks and their customers (Respondent L). Finally, Respondents E and N concluded that the effect of Resolution no.39, 2005 related to the standardisation of interest rates across all areas of facilities and loans granted by commercial banks and the equivalent of rediscount rates of the CBL with a percentage of not more than 2.5 *per cent*.

#### **7.4.2.2 Exchange Rate**

##### ***Questionnaire Findings***

Respondents to the questionnaire were presented with six questions concerning the exchange rate processes and were asked to rate degrees of concern on a 5-point rating scale. Based on the *means* of exchange rate scores, as presented in Table 7.7, the statement that most concerned respondents was: 'The exchange rate might alter investment in the local currency market compared with other markets' (*mean* 4.05, *Skewness* -1.35, *Kurtosis* 1.60). The CBL argued that the majority of the country's foreign exchange rate earnings stem from oil and gas sector sales, were denominated in US\$ and, were unaffected by local exchange rate movements. The Bank further asserted that any devaluation would have little effect on foreign exchange rate earnings. This devaluation would depress foreign investment and, therefore, make the Libyan markets unattractive. It can be argued that the CBL was right, as the devaluation in exchange rates has had a bad effect on the Asian and Russian crises, causing foreign investors to liquidate their investment. Aljerrah (1993) tried to find the optimal exchange rate method in some Middle Eastern countries. It was suggested that the economies of these countries could have enjoyed more advantages from the exchange rate system if they used the exchange rate regime.

The statement: 'It is important to reduce the fluctuations between domestic and foreign currency' was ranked second (*mean* 4.03, *Skewness* -1.33, *Kurtosis* 1.34) and third was:



‘Exchange rate fluctuations have an influence on stock prices’ (*mean* 3.96, *Skewness* -1.18, *Kurtosis* 0.65). These findings are in line with the view suggested by the General Manager of the Central Bank, who argued that, in early 1998, the CBL introduced a new policy for determining the Libyan Dinar exchange rate. Under this amendment priority was given to keeping the Dinar’s exchange rate stable against the US dollar and allowing it to fluctuate against other foreign currencies. The CBL took this measure in order to inject greater transparency, to improve the stability of the Libyan Dinar exchange rate and to bolster the interest rate policy in its efforts to enhance the attractiveness of keeping assets denominated in Libya Dinar against those denominated in US dollars. It is important to note here that, during the period 1986-1995 and the de-stabilisation of the currency arising from the collapse of oil prices and the failure of oil revenues, it was decided to implement measures to safeguard the Libyan Dinar from the negative effects of fluctuations in the value of the US\$ and the whims of the international financial markets, resulting from the deficit in the balance of payments. In fact, the Libyan Dinar was pegged to the Special Drawing Rights (SDR). The average mean of the whole section is 3.94, which indicates overall agreement with the exchange rates statements.

**Table 7.7 Descriptive Statistics for Exchange Rates**

Code	Rank	Statements	Valid N=203			
			Means <sup>a</sup>	SD	Skewness	Kurtosis
C.6	6	There are no distinct monetary policies in relation to the exchange rate policy	3.8227	1.19325	-0.835	-0.262
C.7	4	The movement in exchange rate may change foreign investors’ demand for domestic stock prices compared to other countries	3.9261	1.10778	-1.088	0.563
C.8	2	It is important to reduce fluctuations between domestic and foreign currency	4.0345	1.07344	-1.330	1.336
C.9	1	The exchange rate may influence investment in the local currency market compared with other markets	4.0542	0.98605	-1.350	1.599
C.10	3	Exchange rate fluctuations have influence upon stock prices	3.9557	1.13583	-1.182	0.646
C.11	5	The exchange rate plays a vital role in investing in the stock market	3.8867	1.13538	-1.025	0.340

Notice a: The percentage of respondents who scored 4 “agree” and 5 “strongly agree”.

Source: Analysis of questionnaire survey data.

### ***Interview Findings***

Respondents among the bank managers interviewed were requested to indicate the techniques they most relied on in implementing the exchange rate policies involved in their macro-economic reforms. Since interviewees were not provided with a pre-formulated written set of answers, the relevant measure was the number of times any given use was mentioned. Law no.49 of 2001 of the CBL’s Board of Directors, which considered the equivalent value of the Libyan Dinar against foreign currencies, determined one Libyan Dinar as being equal to 0.608 units of the Special Drawing Rights (SDR) (Respondent A). Moreover, Law no.17 in 2003 decreed that 15 *per cent* of exchange rates related to the foreign exchange earnings and credits transfers to finance the Great Man Made River equated the Libyan Dinar with 0.5175 units of

the SDR (Respondent A). This exchange rate is fixed against this unit, but fluctuates against other foreign currencies at the same exchange rate against the SDR unit (Respondent E). The senior general marketing managers interviewed were asked about the exchange rate which concerned them. After more than five years of operating with the currently used exchange rate, it was evident that this rate was suitable in its time for the Libyan economic conditions. They further emphasised the report of the consultations as confirmed by the IMF which visited Libya in 2005 and was discussed by the Fund's Board of Executive Directors in 2006.

#### **7.4.2.3 Inflation Rate**

##### ***Questionnaire Findings***

Questionnaire respondents were presented with six questions about the inflation rate processes and requested to rate degrees of concern in respect of macro-economic performance, on a 5-point rating scale. Based on the means of inflation rate score, as presented in Table 7.8, the statements that concerned respondents, in descending order of rank, were: 'Any increase in inflation rate reduces expected real returns to investors from holding stocks' (mean 4.17, Skewness -1.55, Kurtosis 2.52). Thereafter, there were no substantial differences between: 'Inflation increases the price of goods and services' (mean 4.03, Skewness -1.33, Kurtosis 1.11) and 'When the rate of inflation rises, stock prices fall due to the effect of inflation on the historic cost method of depreciation and the taxation of nominal capital gains' (mean 3.97, Skewness -1.13, Kurtosis 0.61). These findings are evidenced by this current study. During 1991 and 1992 the inflation rate increased dramatically from 9.4 *per cent* to 11.7 *per cent*, respectively, stemming from the devaluation of the Libyan Dinar and the consequent UN suspension of certain sanctions upon Libya in that period. Therefore, the control of inflation was the most significant success story within the past few years when the US lifted further sanctions and Libya adopted new economic reforms through a modern open door policy. The rate declined sharply from -2.9 *per cent* in 2000 to -2.2 *per cent* in 2004 (IMF, 2007).

In fact, it was crucial for the Libyan economy to depress the inflation rate in the first stage of the economic reform programme period. The finding is consistent with McKinnon's (1988) argument that economic stability is a vital condition for financial development to take place. Countries that suffer from high inflation are less likely to adopt successful financial development plans. Complementary to that, Cooley and Hansen (1989) and De Gregorio (1993) highlight the fact that higher inflation has the effect of reducing labour supply and, consequently, reducing growth. High rates of inflation reduce investment spending and cause a substitution from labour supply to leisure, which directly and negatively affects growth and

capital accumulation (Bittencourt, 2006). The average mean of the whole section is 3.96, which indicates overall agreement with the inflation rates statements.

**Table 7.8 Descriptive Statistics for Inflation Rates**

Code	Rank	Statements	Valid N=203			
			Means <sup>a</sup>	SD	Skewness	Kurtosis
C.12	3	When the rate of inflation rises, stock prices fall due to the effect of inflation on the historic cost method of depreciation and taxation of nominal capital gains	3.9704	1.10315	-1.125	0.608
C.13	1	Any increase in the inflation rate reduces the expected real returns to investors from holding stocks	4.1724	0.96720	-1.546	2.515
C.14	6	The inflation rate impacts strongly on social life	3.8177	1.15668	-0.859	-0.056
C.15	2	Inflation increases the price of goods and services	4.0296	1.11653	-1.330	1.111
C.16	4	Inflation decreases currency value	3.9458	1.12224	-1.102	0.514
C.17	5	Inflation causes unemployment and reduction of job opportunities	3.8424	1.15817	-0.924	0.034

Notice a: The percentage of respondents who scored 4 “agree” and 5 “strongly agree”.

Source: Analysis of questionnaire survey data.

### ***Interview Findings***

Interviewees were additionally asked about concerns regarding inflation rates in which their macro-economic reform operated. Since they were not required to rate or tick a pre-formulated written set of answers, the relevant measure was the number of times any given information was mentioned. Much of the evidence from the interviews supports the findings of the questionnaire. Respondent M spoke about inflation saying, *“This issue is highly significant at this particular time and has become a problem for limited income and inflation. The continuing rise in prices and low purchasing power has made this a crucial issue”*.

Respondent E said that many nations suffer from the problem of high prices due to the economies of either debt or production and that it is a problem encountered by many global economies. However, in Libya there is no inflation within the national market. The problem is not the economic policies, but that there is no proper co-ordination within economic policy, meaning that monetary policy and fiscal policy, customs’ policy and wage policy are not linked. This result suggests that if there is no increase in production, prices rise automatically and this results in depressed salaries. Despite this evidence supporting the questionnaire data, there were some responses which disagreed. However, there is no co-ordination between the CBL policy and the Secretariat of Treasury and Customs. Each refuses to agree upon a certain policy, and hence, it is the citizens who are affected. Here we are discussing the rise in money supply within the Libyan market (Respondent A). Two key reasons for not relying on the inflation rate were mentioned by interviewees: the price increase is due primarily to the exchange rate; the internal policies in the domestic market have a critical relationship with the level of salaries. This has played a significant role in the increase in costs of some commodities including food and building materials, which rose suddenly (Respondents E, J and M).

#### 7.4.2.4 Budget Deficit

##### *Questionnaire Findings*

Questionnaire respondents were presented with a list of six questions concerning budget deficits processes. They were asked to rate degrees of concern about the macro-economic reform, on a 5-point rating scale. Based on the *mean* of the budget deficits score, as presented in Table 7.9, the statement about budget deficit issues that concerned respondents the most was: 'Budget deficit is considered to be the excess of government expenditure over time' (*mean* 3.01, *Skewness* -1.25, *Kurtosis* 0.85). The interviews support this result, three of the fourteen interviewees considering that rates of increase in total expenditure reached high proportions, hitting more than 45 *per cent* in 2001, falling to 25.2 *per cent* in 2003, then rising to more than 29 *per cent* in 2006 before returning to stabilise at 6.3 *per cent* in 2005 (Respondent K). Respondents A and G also indicated that, despite this, increases were not reflected in per-capita public expenditure in the real sense that these increases in public spending are apparent where the per-capita public expenditure in 2002 amounted to about 1068.6 LD at a lower total 14.7 *per cent* of its level in 2001. It fell by 17.3 *per cent* in 2005 from the level reached in 2004. This is an indication that, despite increased spending levels during the period 2000-2005, this has not been reflected in the increase of goods and services for individuals.

The next highest ranked statement was: 'The exploitation of private sector tools contributing to reduction of the budget deficit' (*mean* 3.87, *Skewness* -0.95, *Kurtosis* 0.15). A possible explanation could be that most private firms are small and their top managements play a key role, controlling most of the operational and managerial activities. The third highest ranking statement was: 'A low value in budget deficit reduces government spending' (*mean* 3.73, *Skewness* -0.79, *Kurtosis* -0.20). To achieve this, many developing countries, i.e. Bulgaria, Egypt, Hungary, Jordan, Turkey and Latin America, began their economic reform programmes by cutting or reducing both subsidies and investment and, at the same time, those countries used taxes as an instrument to raise their revenues. Although these methods have a bad effect on the investment climate, this can be considered an appropriate procedure in the short-term until stability in the government budget is achieved. Empirically, Heitman (1969) attempted to analyse the effect of oil income on the Libyan economy before the oil embargo. He concluded that government expenditure depends heavily on oil revenues and oil exports. An overall average of 3.75 is recorded indicating that the respondents agreed with the budget deficit statements.

**Table 7.9 Descriptive Statistics Budget Deficit**

Code	Rank	Statements	Valid N=203			
			Means <sup>a</sup>	SD	Skewness	Kurtosis
C.18	1	Budget deficit is considered to be the excess of government expenditure over time	3.9951	1.11470	-1.246	0.853
C.19	5	Reducing the budget deficit overcomes unemployment problems	3.6601	1.19725	-0.664	-0.474
C.20	4	Budget deficit prohibits the increase of public resources	3.6847	1.19368	-0.710	-0.398
C.21	6	Budget deficit can lead to increased inflation and interest rates	3.5862	1.25320	-0.624	-0.644
C.22	3	A low value in budget deficit reduces government spending	3.7291	1.16487	-0.785	-0.203
C.23	2	The exploitation of private sector tools contributes to reduction of the budget deficit	3.8719	1.12283	-0.953	0.146

Notice a: The percentage of respondents who scored 4 “agree” and 5 “strongly agree”.

Source: Analysis of questionnaire survey data.

### ***Interview Findings***

Interviewees were additionally asked about concerns regarding the budget deficit and were requested to indicate the techniques upon which they relied the most in budget deficit decisions involved in their macro-economic reforms. Since interviewees were not given a pre-formulated written set of answers, the relevant measure was the number of instances any given technique was mentioned. A public sector manager stated, “*During the period 2000-2007, oil revenues represented more than 79.5 per cent of budget revenues and, therefore, the proportion of non-oil revenues to cover total public expenditure of about 21 per cent during the same period, which rendered non-oil deficit greater than 32 per cent of GDP and the average for the period 2000-2007*”. In addition, the financial manager and accounting disclosure manager claimed that the general situation of the public budget can be observed as the continuation of the budget deficit during the period 2000-2006. The highest rates reached in excess of 2 billion LD. Furthermore, non-oil revenues cover averaged 19.7 *per cent* of the total expenditure. This percentage amounted to a minimum 9.6 *per cent* in 2003 and reached 12.6 *per cent* in 2006. In this regard, Respondent N stated that the government authority adopted a fiscal policy regarding management of aggregate demand via a reduction of public spending and the continued policy of salaried workers’ organisations, secretariats and intensifying tax collection efforts in various ways, with some adjustments to tax legislation and tax administration reform. In spite of this, there remain outbreaks of tax evasion not keeping pace with developments within contemporary tax administration and IT technical fields.

#### ***7.4.2.5 Per-capita Income***

### ***Questionnaire Findings***

Questionnaire respondents were presented with a list of five statements relating to per-capita income processes and asked to rate their degrees of concern with reference to the macro-economic reform, on a 5-point rating scale. Based on the *mean* of the per-capita income score,

as presented in Table 7.10, the per-capita income statements that concerned respondents the most were, firstly: ‘Per-capita income is one of the driving forces towards a stock market’ (*mean 3.83, Skewness -0.84, Kurtosis -0.40*), a finding that is consistent with Goldsmith (1969), Shaw (1973) and Mckinnon (1973) who all found that development of financial markets was significantly correlated with the level of per-capita income. The next highest rank was the statement: ‘Per-capita income is reflected in the development of the Libyan economy’ (*mean 3.81, Skewness -0.88, Kurtosis -0.04*). The national economy finding, oil discovery and exportation moved the country to the forefront of world economies. The standard of living rose as a result of the increasing number of foreign oil companies and the establishment of new Libyan economic activities. The average income per capita was 20 LD per annum before 1950, about 100 LD in 1960, 600 LD in 1970 and 8,000 LD in 1984, while the development expenditure from 1970 to 1984 was equivalent to 18.5 billion LD, or 62.5 billion US\$ (Agnaiia, 1996). By the end of the 1980s the Libyan economy was near to collapse. In turn, this caused the per-capita income to be placed under fiscal discipline with structural and economic reforms including the investor-friendly laws of the 1990s which contributed towards a satisfactory recovery in per-capita GDP. Indeed, per-capita income increased from 59,339 US\$ in 1999 to 7,589 US\$ in 2006, which was attributed to improved performance in the construction, trade and financial services sector (IMF, 2007). This finding suggests that apart from experiencing a huge alternation to the market system mechanism, the developing economy of Libya, has the distinctive characteristic of being reliant, to a very great extent, on the oil industry as the main source of income of the economy.

The third highest ranking was the statement: ‘The human development index is strongly affected by per-capita income’ (*mean 3.73, Skewness -0.73, Kurtosis -0.59*). This finding is in contradiction to that reported by the UNDP (2001: 13), that pointed out that, *“Rankings by HDI and by GDP per capita can be quite different, showing that countries do not have to wait for economic prosperity to make progress in human development [...]. Costa Rica and Korea have both made impressive human development gains, reflected in HDIs of more than 0.800, but Costa Rica has achieved this human outcome with only half the income of Korea. Pakistan and Vietnam have similar incomes, but Vietnam has done much more in translating that income into human development [...]. So, with the right policies, countries can advance faster in human development than economic growth.”* This tends to support the view of those who argue that per capita income is a reasonable proxy for ranking nations as their relative and absolute level of development. Overall, a mean of 3.73 is recorded, showing that there is agreement on the per-capita income statements.

**Table 7.10 Descriptive Statistics for Per-capita Income**

Code	Rank	Statements	Valid N=203			
			Means <sup>a</sup>	SD	Skewness	Kurtosis
C.24	2	Per-capita income can be reflected in development of the Libyan economy	3.8128	1.11446	-0.881	-0.035
C.25	1	Per-capita income is one of the driving forces towards a stock market	3.8325	1.19881	-0.839	-0.395
C.26	3	The human development index is strongly affected by per-capita income	3.7340	1.21385	-0.734	-0.590
C.27	4	The per-capita income of individuals depends upon growth population	3.6847	1.08048	-0.652	-0.479
C.28	5	Fiscal discipline determines the per-capita income that satisfies GDP growth rate	3.6059	1.13555	-0.634	-0.531

Notice a: The percentage of respondents who scored 4 “agree” and 5 “strongly agree”.

Source: Analysis of questionnaire survey data.

### ***Interview Findings***

Interviewees were asked from where they obtained technical information about per-capita income in which their macro-economic reforms operate. Since they were not required to rate or tick a pre-formulated written set of answers, the relevant measure was the number of times any given aspect was mentioned. Respondent L said that the Libyan government has worked on many of the reforms that would increase citizens’ incomes where the law has reconsidered salaries which are associated with Law no.15 in 1981. This resulted in an increase of 50 *per cent* and is expected to increase an employee’s salary to more than 600 LD per month. In addition, the government gradually removed their support for commodity supply (Respondents G and M). Moreover, the Libyan authorities worked to take action to regulate foreign labour, which will assist in increasing national employment by about 14 *per cent* and obliges foreign companies wishing to operate in Libya to make major investments (Respondent C). Interviewees were further required to explain concerns of per-capita income. Many had difficulty in responding, however, having witnessed the extremely competitive global companies’ investment in Libya in 2007, especially in the areas of oil and gas, where there has been intense competition following the arrival of major American and European companies to compete alongside Asian entities (Respondent D).

#### **7.4.2.6 Real GDP Growth Rate**

### ***Questionnaire Findings***

Respondents to the questionnaires were presented with a list of eight statements concerned with real GDP growth rate processes and, were asked to indicate their degrees of concern with reference to macro-economic reform on a 5-point scale. Based on the *mean* of the real GDP growth rate score, as presented in Table 7.11, the statements about real GDP growth rates that concerned respondents the most were, firstly: ‘Oil prices impact on GDP of the stock market’ (*mean* 3.88, *Skewness* -1.05, *Kurtosis* 0.64). This finding is consistent with the conclusion of Abbas (1987) that oil prices increased from 2.3 US\$ per barrel in 1969 to 25 US\$ per barrel in

1979 and, after this increase in oil price, as stated by Giurnaz (1985), Libyan oil revenues increased from 2.4 billion LD to about 6.5 billion LD by 1980. The GDP growth rate was 38.8 *per cent* in 1980. This explanation suggests that this situation gave the government the ability to increase spending on development in all sectors. More data available (see Chapter Two: Subsection 2.3.3 and Appendix A, Table A 3.12) shows the GDP growth rate by type of economic activity.

The next highest rank was given to the statement: ‘Higher GDP growth leads to an increase in companies’ cash flows’ (*mean* 3.74, *Skewness* -0.86, *Kurtosis* -0.27). Similar results can be observed for the large companies as these may also have lower risk through diversification, more stable cash flows and established operating and credit histories. These factors provide large firms with greater access to alternative sources of finance in times of financial distress and may encourage them to take on relatively high debt burdens. In the third highest ranking there was some similarity among the means for two statements, these being: ‘New improved and varied products, goods and services which increased in the economic growth rate’ and ‘Growth in GDP reduces unemployment’ (*mean* 3.69, *Skewness* -0.67, *Kurtosis* -0.51). This follows the work by Levine and Zervos (1993), Atje and Jovanovic (1993), Levine and Zervos (1998), Rousseau and Wachtel (2000), and Beck and Levine (2003), which shows that stock market development is strongly correlated with growth rates of real GDP per capita. The overall mean of the section was 3.63, indicating agreement with the statements regarding continuous improvement in the economic growth rate.

**Table 7.11 Descriptive Statistics for Real GDP Growth Rate**

Code	Rank	Statements	Valid N=203			
			Means <sup>a</sup>	SD	Skewness	Kurtosis
C.29	2	Higher GDP growth leads to increase in companies’ cash flows	3.7389	1.19231	-0.863	-0.266
C.30	5	Real GDP growth rate is necessary to increase output	3.5419	1.23960	-0.554	-0.871
C.31	6	When increasing the per-capita of GDP, the Libyan economy must be competitive in the stock market	3.4680	1.25970	-0.475	-0.976
C.32	4	There is a strong growth rate in export and import trade	3.6601	1.17639	-0.657	-0.628
C.33	1	Oil prices impact on GDP of the stock market	3.8818	1.03685	-1.052	0.638
C.34	3	New improved and varied products, goods and services which increased in the economic growth rate	3.6897	1.11126	-0.673	-0.511
C.35	3	Growth in GDP reduces unemployment	3.6897	1.11126	-0.673	-0.511
C.36	7	Investment return growth is high in their economy	3.3596	1.28731	-0.346	-1.110

Notice a: The percentage of respondents who scored 4 “agree” and 5 “strongly agree”.

Source: Analysis of questionnaire survey data.

### ***Interview Findings***

Interviewees were asked from where they obtained technical information related to the real GDP growth rate in which their macro-economic reform operates. Since interviewees were not required to rate or tick a pre-formulated written set of answers, the relevant measure was the number of times any given factor was mentioned. The Director of the Economic Research



Centre stated, *“During 2007 the Libyan economy increased by more than 5.6 per cent following the largest economic and administrative reform programme by the government during its five-year plan. Development plans at all levels exceeded some 350 billion US\$ in infrastructure, housing, airports and railways”*. This results from a continued increase in world oil prices upon which 95 per cent of the Libyan economy was dependent (Respondent M). This was further explained by Respondent C who said that Libyan oil wealth ranked 5th among Arab countries and 9th globally, with an estimated 42 billion barrels annually, and that it was aimed, in the coming years, to increase this to 100 billion barrels. In addition, the wealth amounts to 1,672 billion cubic metres, ranking as 8th among Arab states and 24th internationally. Oil company managers were asked which oil and gas production aspects most concerned them. Their responses revealed that rate of production is currently 1.7 million with the intention of attaining 2 million barrels by the end of 2008, and then 3 million barrels by the end of 2012, as it seeks through exploration to attract new investments in this area, which so far exceeds more than 60 billion US\$ and gas production of about 45 trillion square metres.

Based on this discussion, the collected data identifies that the highest ranking statement relates to the inflation rate, which has a mean of 3.96, while the lowest ranking was recorded for real GDP growth rate with a mean of 3.63 which could be a reasonable sign that there is a clear understanding of the value of macro-economic reform factors. Respondents further indicated that interest rates affect the stock market and that liberalisation of the interest rate also has an influence, but to a lesser extent. Exchange rates which may alter investment in the local currency market compared with other markets are considered a significant factor of macro-economic reform. Most respondents felt that any increase in inflation rate reduces expected real returns to investors from holding stocks, and that when inflation increases, so too does the price of goods and services. Additionally, the responses indicate that budget deficit is considered to be the excess of government expenditure over time, and that per-capita income is one of the driving forces towards a stock market, as also are oil prices which impact on stock market performance. The analysis provided evidence to suggest that the most important strategy is to increase the rate of economic growth of output and to make a strong contribution to capital and labour.

#### **7.4.3 Financial Maturity Independent Variables**

This group covers the fourth part of the questionnaire survey (Appendix G: Section D) and some questions from the interviews (Appendix K). The aim of this section is to *present* and *analyse* data related to financial maturity as the financial sector is very important for capital

allocation and financial intermediation. Transformation of savings into investments includes risk sharing, as reforms in the financial sector were a key element of Libya's structural reform programme. The relationship between banking intermediation and that performed by stock markets is becoming increasingly observable within the framework of the Libyan financial development context. These independent variables include ratio of banking assets to GDP (banking assets ratio), ratio of domestic credit to GDP (domestic credit ratio) and ratio of stock market capitalisation of GDP (stock market capitalisation).

#### **7.4.3.1 Banking Assets Ratio**

##### ***Questionnaire Findings***

Respondents to the questionnaires were presented with four statements about the ratio of banking assets to GDP processes and were asked to rate degrees of concern relating to financial maturity, on a 5-point rating scale. Based on the *means* of banking assets to GDP ratio score, as presented in Table 7.12, the statement concerning respondents the most was: 'Financial intermediaries get larger measured by total assets relative to GDP' (*mean* 3.92, *Skewness* -0.01, *Kurtosis* 0.35). This ratio gives evidence of the importance of the financial service performed by the banking sector relative to the size of the economy. It has been reported in the literature that businesses will have different financial needs as they develop and they will increasingly rely on more funds from the banks (Michaelas, 1998; Churchill and Lewis, 1983). Empirically, Demirgüç-Kunt and Levine (1996) have found that most stock market indicators are highly correlated with the financial intermediaries (banks, insurance companies and pension funds). This finding suggests that countries with well-developed stock markets tend to have well-developed financial intermediaries.

The second highest ranked concern was expressed in the statement: 'The low ratio of broad money to GDP indicates a low monetary depth within the economy' (*mean* 3.85, *Skewness* -0.97, *Kurtosis* 0.05) while 'Banking assets of GDP can improve growth rate in the stock market' was the statement recording the third highest rank: (*mean* 3.83, *Skewness* -0.91, *Kurtosis* 0.16). In addition, the Financial Times newspaper (1996) in one of its studies, indicated that liquidity within the stock market encourages banks to lend, giving investment a further boost. This, in fact, is especially important in poor countries since successful stock markets can dramatically improve the information that is available about companies, which ought to give creditors confidence. That may be one reason why the ratio of bank loans to GDP tends to rise as the level of investment increases and this should lead to raising the

economic growth. The overall mean of 3.85 indicates respondents' agreement to the statements in relation with the banking assets ratio of GDP.

**Table 7.12 Descriptive Statistics for Banking Assets Ratio of GDP**

Code	Rank	Statements	Valid N=203			
			Means <sup>a</sup>	SD	Skewness	Kurtosis
D.1	4	Deposit money bank assets/total banking sector assets	3.8030	1.17759	-0.842	-0.197
D.2	3	Banking assets of GDP can improve growth rate in the stock market	3.8325	1.11760	-0.911	0.162
D.3	1	Financial intermediaries get larger measured by total assets relative to GDP	3.9212	1.10521	-0.998	0.352
D.4	2	The low ratio of broad money to GDP indicates low monetary depth of the economy	3.8473	1.17790	-0.966	0.051

Notice a: The percentage of respondents who scored 4 "agree" and 5 "strongly agree".

Source: Analysis of questionnaire survey data.

### ***Interview Findings***

The main reason for not relying on the banking assets ratio was mentioned by interviewees as being the ratio of banking assets to GDP, confirming that levels of financial intermediation in the Libyan economy are comparatively low in relation to economic activity (Respondents A and E). However, the higher ratio of banking assets to GDP is not evidence of a healthier banking system (Stanislav, 2004).

#### **7.4.3.2 Domestic Credit Ratio**

### ***Questionnaire Findings***

Respondents were presented with nine statements related to the ratio of domestic credit to GDP processes and were requested to rate their degree of concern in relation to the financial maturity, on a 5-point rating scale. Based on the *means* of domestic credit to GDP score, as presented in Table 7.13, the associated statement that concerned respondents the most was: 'Domestic credit of GDP is one of the measurements of financial maturity of the stock market systems' (*mean* 3.73, *Skewness* -0.84, *Kurtosis* -0.22). In order for banks to fund investors, investors must fulfil at least two kinds of covenant: they must meet minimum debt-service coverage ratios and meet prudent bank-stipulated "debt-equity" ratios. General Managers of the Central Bank and the stock market suggest that firms prefer to finance their investments using debt since the cost of debt (due to its tax deductibility) is lower than the cost of equity. However, debt cannot exist as a replacement for equity beyond a certain level of leverage since lenders want the collateral of equity as a cushion. More equity, therefore, allows for more debt.

The following statement was ranked highest by the respondents: 'There is limited access to loans and credit facilities' (*mean* 3.67, *Skewness* -0.75, *Kurtosis* -0.31). This was followed by statements concerning the problems with lenders regarding loans or overdraft facilities in

Libyan companies<sup>35</sup>. Some differences based on the public and private sector emerged. Private companies, for instance, seem to have more problems with lenders regarding loans or overdraft facilities than public companies. Manufacturing companies have fewer problems with lenders than non-manufacturing ones, while there is little difference between smaller and larger companies about facing problems with lenders regarding loans or overdraft facilities. Smaller companies are more influenced by red tape, banking charges and the rejection of loan applications than are large companies, whereas the large companies are more affected by the interest rate than smaller companies. The average mean of the whole section is 3.72, which indicates overall agreement with the statements regarding the domestic credit ratio of GDP.

**Table 7.13 Descriptive Statistics for Domestic Credit Ratio of GDP**

Code	Rank	Statements	Valid N=203			
			Means <sup>a</sup>	SD	Skewness	Kurtosis
D.5	2	There is limited access to loans and credit facilities	3.6749	1.15300	-0.747	-0.311
D.6		Have you experienced any of the following problems?				
D.6.1	4	Loan application rejected	3.7143	1.17614	-0.792	-0.212
D.6.2	2	Charges too high	3.8177	1.15239	-0.931	0.047
D.6.3	5	Relationship difficulties	3.6897	1.12454	-0.651	-0.355
D.6.4	6	Bank errors	3.6404	1.17049	-0.633	-0.445
D.6.5	1	Red tape (Bureaucracy)	3.8719	1.11841	-1.031	0.355
D.6.6	3	Interest rates too high	3.7783	1.15832	-0.890	-0.010
D.7	1	Domestic credit of GDP is one of the measurements of financial maturity of the stock market systems	3.7340	1.16389	-0.837	-0.216
D.8	3	Domestic credit of GDP ability is considered to represent financial maturity in the stock market	3.5616	1.17730	-0.544	-0.749

Notice a: The percentage of respondents who scored 4 “agree” and 5 “strongly agree”.

Source: Analysis of questionnaire survey data.

### ***Interview Findings***

Interviewees were additionally asked how the domestic credit ratio influenced their decision-making processes. Since interviewees were not given a pre-formulated written set of answers, the relevant measure was the number of times any given use was mentioned. A decrease in the percentage of total bank credit to private sector and public institutions was mentioned, and to partnerships and individuals during the period 1995-2005, which was reported as dropping from 41 *per cent* in 1995 to 16.7 *per cent* in 2005. The total volume of credit increased from 4,372 billion LD in 1995 to 6,069 billion LD in 2000 and then rose to 9,358 billion LD in 2005. The reason was that the Libyan government adopted a policy of giving credits to various sectors in order to enhance and improve the social and economical situation of the country. Despite this evidence supporting the questionnaire data, there were some contradictory responses, indicating the weakness of investments, particularly if the increase in the apparent

<sup>35</sup> Keister (2000) argues that during an economic transition, the capital structure of companies might be affected due to the shortage of financing from the state. In this regard, Libyan companies may have to begin gradually to borrow from non-state capital sources in order to cover the shortage of financing from the state.

size of general liquidity within the economy, which exceeded 20,585 billion in 2006, is considered (Respondents E and M). Therefore, it can be argued that Libyan companies are more likely to be financed by debt over equity and especially short-term debt financing.

#### 7.4.3.3 *Stock Market Capitalisation Ratio*

##### *Questionnaire Findings*

Respondents to the questionnaires were presented with four statements concerning the stock market capitalisation to GDP processes and requested to rate degrees of concern in relation to the financial maturity, on a 5-point rating scale. Based on the *means* of stock market capitalisation ratio score, as presented in Table 7.14, the statement that most concerned respondents was: 'Stock markets become larger, as measured by market capitalisation relative to GDP' (*mean* 3.70, *Skewness* -0.77, *Kurtosis* -0.38). This result suggests that, as stock markets become more developed and as imperfections in the capital markets are removed, corporations will have greater access to a broader range of financial instruments. This increased access would be expected to affect the financial policies of firms, thus affecting firms' investment, profitability and productivity growth, thereby establishing evidence about the relationship between the stock market development and firms' growth. The second highest ranked statement was: 'Stock market capitalisation of GDP represents one aspect of financial maturity in the market-based economy' (*mean* 3.69, *Skewness* -0.77, *Kurtosis* -0.45). In the same vein, Rousseau and Wachtel (2000) use two measures of stock market development: these being, the ratio of market capitalisation to GDP and the ratio of total value traded to GDP. Both have a positive coefficient, but only the latter is significant. The results show that the development of a liquid and highly capitalised equity market accelerates growth.

The statement: 'Independence of the Central Bank' (*mean* 3.37, *Skewness* -0.29, *Kurtosis* -1.07) was ranked lowest and, therefore, this factor was considered the least significant source of stock market capitalisation of GDP of those listed. This response can be attributed to the fact that the CBL has made significant improvements in the supervisory system by instituting full financial disclosure by the banks. It has already adopted a number of measures to replace direct control with indirect monetary instruments in order to encourage competition among banks and, as a confidence-building measure removed the credit-to-deposit ratio, thus encouraging the evolution of an efficient inter-bank money market and resulting in the opinion of most respondents that the stock market should be independent and not controlled by the CBL (see Appendix K: Section K 4.1). An overall average of 3.59 is recorded, indicating that the respondents agreed with the stock market capitalisation ratio of GDP statements.

**Table 7.14 Descriptive Statistics for Stock Market Capitalisation Ratio of GDP**

Code	Rank	Statements	Valid N=203			
			Means <sup>a</sup>	SD	Skewness	Kurtosis
D.9	2	Stock market capitalisation of GDP represents one aspect of financial maturity in the market-based economy	3.6897	1.20117	-0.766	-0.451
D.10	3	Stock market capitalisation of GDP increases investment in the stock market	3.5764	1.28504	-0.623	-0.801
D.11	1	Stock markets become larger, as measured by market capitalisation relative to GDP	3.7044	1.16523	-0.770	-0.382
D.12	4	Independence of the central bank	3.3695	1.27677	-0.289	-1.070

Notice a: The percentage of respondents who scored 4 “agree” and 5 “strongly agree”.

Source: Analysis of questionnaire survey data.

### ***Interview Findings***

Participants who were interviewed from within the marketing sector were requested to indicate the techniques they most relied on in stock market capitalisation. They were not required to tick or rate a pre-formulated written set of answers. The relevant measure was the number of times any given technique was mentioned. The findings from these interviewees, as depicted in Table 7.15, confirmed the questionnaire findings.

**Table 7.15 Respondents’ Interviews to Stock Market Development**

Stock Market Development	Valid N=9 interviews <sup>a</sup>	
	Number of Mentions	Per cent
Market capitalisation ratio	8	88.9
Share value traded	6	66.7

Notice a: Details totalled more than N = 9 and 100 *per cent* due to duplicate responses.

Source: Analysis of the data obtained from semi-structured interviews.

The primary reasons for relying on stock market development were stated as market capitalisation ratio (Respondent B) and share value traded ratio defended by GDP (Respondent D).

To summarise, all the data which has been presented and discussed previously was collected by a questionnaire built on a 5-point Likert scale. Analysis of the results of the critical variables of financial maturity shows that the highest rank has been marked for banking assets ratio with a mean of 3.85, while the lowest level was recorded for stock market capitalisation ratio with a mean of 3.59 which could be a reasonable sign that there is a clear understanding of the value of financial maturity factors. The ratio of banking assets defended by GDP concerned respondents as a most important factor, since higher ratios of bank credit to GDP indicate better functioning of the country’s banking sector and a growth in stock markets, as measured by market capitalisation relative to GDP. We argue that banking and the stock market are complimentary in the provision of financial development because they reflect the quality of bank credits, which is just as important as the size of bank credits.

#### 7.4.4 Stock Market Performance Dependent Variables

This group covers the fifth part of the questionnaire survey (Appendix G: Section E) and some questions from the interviews (Appendix K). The aim of this section is to *present* and *analyse* data related to stock market performance within the framework of the Libyan economic context, where dependent variables include market (size, liquidity, activity, concentration).

##### 7.4.4.1 Market Size

##### *Questionnaire Findings*

Respondents to the questionnaires were presented with five statements concerning market size processes and were asked to rate degrees of concern relating to stock market performance on a 5-point rating scale. Based on the *mean* of the market size score, as presented in Table 7.16, market size issues that concerned respondents the most were expressed firstly in the statement that: ‘The number of listed companies is a critical factor for determining market size’ (*mean* 3.79, *Skewness* -0.89, *Kurtosis* -0.18). This may indicate that the limited number of companies listed on the Libyan stock market is related to the fact that many Libyan companies remain family-owned businesses with no interest in going public. Their refusal to issue publicly-held equity is based on a fear that they will lose control and be forced to disclose what is believed to be personal information. The average size of the companies listed in stock markets<sup>36</sup> provides an idea about the number of shares available for trading. When small sized companies are listed on the stock market, this implies that a smaller number of shares are available for trading, which initially deters investors from entering the market and, at a later stage, when trading is active, results in violent price movements.

The next highest ranking statement was: ‘The number of financial intermediaries increases the market size in the stock market’ (*mean* 3.75, *Skewness* -0.77, *Kurtosis* -0.53). This finding was the most important result because the Libyan economy needs to develop and promote the creation of specialised financial institutions: pension funds, insurance companies and mutual funds. These institutions can play an important role in the modernisation of the stock market and the development of an efficient trading and settlement system. The third highest ranking statement was: ‘The volume of shares listed enhances the stock market size’ (*mean* 3.74, *Skewness* -0.83, *Kurtosis* -0.34), which refers to the total number of shares for all companies listed in the market. It is assumed that the size of the stock markets is positively correlated

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<sup>36</sup> The average company size is calculated by dividing the total market capitalisation by the number of listed companies.

with the ability to mobilise capital and to diversify risk<sup>37</sup>. The statement: ‘Market capitalisation is considered to be a measure of market size in the stock market’ (*Mean* 3.69, *Skewness* -0.79, *Kurtosis* -0.37) was ranked lowest and therefore market capitalisation was considered the least important source of market size of those listed. If the current research were to be repeated it may be better to change this question to give greater differentiation; for example, to ask respondents to rank the importance of the factors. The overall mean the section was 3.73, indicating agreement with the statements regarding continuous improvement in the companies.

**Table 7.16 Descriptive Statistics for Market Size**

Code	Rank	Statements	Valid N=203			
			Means <sup>a</sup>	SD	Skewness	Kurtosis
E.1	5	Market capitalisation is considered to be a measure of market size in the stock market	3.6946	1.17537	-0.790	-0.366
E.2	4	Market capitalisation is a percentage of GDP in the stock market	3.6995	1.24811	-0.756	-0.549
E.3	1	The number of listed companies is an important factor for determining market size	3.7882	1.18131	-0.891	-0.181
E.4	3	The volume of shares listed enhances the stock market size	3.7438	1.21598	-0.832	-0.341
E.5	2	The number of financial intermediaries increases the market size in the stock market	3.7537	1.22613	-0.772	-0.535

Notice a: The percentage of respondents who scored 4 “agree” and 5 “strongly agree”.

Source: Analysis of questionnaire survey data.

### ***Interview Findings***

Respondent interviewees in the stock market were asked about the market size which most concerned them. Since interviewees were not required to rank order or rate the size, the relevant measure was simply the number of times any given market size was mentioned. The interview findings, as depicted in Table 7.17, illustrate that the number of financial intermediaries was reported by nine interviewees, the number of listed companies was reported by eight and the volume of shares listed was reported by six interviewees.

**Table 7.17 Respondents’ Interviews to Market Size**

Market Size	Valid N=12 interviews <sup>a</sup>	
	Number of Mentions	Per cent
Number of listed companies	8	66.7
Volume of shares listed	6	50.0
Number of financial intermediaries	9	75.0

Notice a: Details totalled more than N = 12 and 100 *per cent* due to duplicate responses.

Source: Analysis of the data obtained from semi-structured interviews.

Interviewees were further required to explain their concerns regarding market size. The Libyan stock market has witnessed an increasing improvement in the level of its performance, where

<sup>37</sup> Sirri and Tufano (1995) argue that by enhancing risk diversification, liquidity and size of feasible firms, resource allocation is improved. In addition, I argue here that the main impact of capital mobilisation is one of promoting technological innovation. Through easing the burden of risk to capital contributors as well as to the entrepreneurs, markets and institutions enable the undertaking of risky technological innovations.



the volume of shares listed reached about 4,942,533, as a total value of 254,543,455.000 LD in 2007. The number of financial intermediaries has risen from only two in 2006 to 14 in 2008, which means a 650 *per cent* increase. It can be argued that one reason for this is the large list of companies which implies a more developed stock market and that, in mature markets, it is relatively easy to list the companies on the exchange. Cumbersome listing rules (as are prevalent in undeveloped markets) deter many companies from listing.

#### **7.4.4.2 Market Liquidity**

##### ***Questionnaire Findings***

Questionnaire respondents were asked to rate four statements concerned with market liquidity processes, on a 5-point rating scale. Based on the *mean* of the market liquidity score, as presented in Table 7.18, the statement that concerned respondents the most was: 'The total ratio of value-traded to GDP which impacts on the stock market' (*mean* 3.70, *Skewness* -0.81, *Kurtosis* -0.43). The next highest ranking statement was: 'Turnover ratios which are indicators of the market's ability to trade significant positions' (*mean* 3.67, *Skewness* -0.73, *Kurtosis* -0.47). These findings may indicate that both the value-traded and turnover ratios are significantly correlated with economic growth. This implies that increases in the stock prices are not driving the liquidity results and this price effect does not influence the turnover ratio.

The third highest ranking statement was: 'The total value-traded in market capitalisation contributes to viability and accessibility of the stock market' (*mean* 3.58, *Skewness* -0.87, *Kurtosis* -0.55). Previous literature has revealed that stock markets in countries with better-developed financial systems tend to grow faster than in countries with poor and relatively less liquid stock exchanges and weak financial and banking sectors (Levine, 2003). Nevertheless, empirical work by Levine and Zervos (1998) has demonstrated that the mere size of the stock market is not enough to foster economic growth. Simply listing privatised companies on the stock market is not enough to spur further real economic activity. It is rather liquidity of stock markets that fosters resource allocation and growth. The relatively low liquidity of the Libyan stock market compared with some emerging markets is primarily due to the following factors: (1) the current method of trading on the exchange: there are no markets and that tends to limit the size of trades that can be executed; (2) a substantial government's share portfolio, a significant portion of which is not traded; (3) the relative lack and under-development of institutional investors, e.g. pension funds, insurance companies and mutual funds. An overall average of 3.63 is recorded indicating that the respondents agreed with the market liquidity statements.

**Table 7.18 Descriptive Statistics for Market Liquidity**

Code	Rank	Statements	Valid N=203			
			Means <sup>a</sup>	SD	Skewness	Kurtosis
E.6	3	The total value-traded in market capitalisation contributes to viability and accessibility of the stock market	3.5813	1.34129	-0.816	-0.550
E.7	1	The ratio of total value-traded to GDP impacts on the stock market	3.6995	1.24015	-0.811	-0.425
E.8	4	The ratio of total value-traded shares helps in increasing volume of shares listed of market liquidity in the stock market	3.5714	1.34554	-0.819	-0.553
E.9	2	Turnover ratios are indicators of the market's ability to trade significant positions	3.6650	1.19243	-0.725	-0.470

Notice a: The percentage of respondents who scored 4 “agree” and 5 “strongly agree”.

Source: Analysis of questionnaire survey data.

### ***Interview Findings***

Interviewees in the stock market were asked about the market liquidity aspects which most concerned them. As they were not required to rank order or rate the liquidity, the relevant measure was simply the number of times that any given market liquidity was mentioned. Total value traded to GDP, as reported in Table 7.19, headed the list and was reported by ten interviewees, followed by volume of shares traded to volume of shares listed that was reported by eight individuals and total value traded to market capitalisation reported by six interviewees.

**Table 7.19 Respondents' Interviews to Market Liquidity**

Market Liquidity	Valid N=12 interviews <sup>a</sup>	
	Number of Mentions	Per cent
Total value traded to GDP	10	83.3
Total value traded to market capitalisation	6	50.0
Volume of shares traded to volume of shares listed	8	66.7

Notice a: Details totalled more than N = 12 and 100 per cent due to duplicate responses.

Source: Analysis of the data obtained from semi-structured interviews.

Much of the evidence from the interviews supports the findings of the questionnaire. Respondents G and M argued that the value per share in the companies contributes no more than 100 LD and determines the proportion of the contribution per-capita ratios not exceeded, according to the following regulation:

*“4 per cent of the total shares of companies do not exceed one million LD capital and must not exceed assets owned by the individual and its branches where there are 8 per cent of the total number of shares; 2 per cent of the total shares of companies in excess of their capital million LD, or more than two million LD and must not exceed assets owned by the individual, and its branches at 4 per cent of the total number of shares; 0.5 per cent of the total shares of companies that have capital exceeding four million LD and must not exceed assets owned by the individual and its branches at 1 per cent of the total number of shares”.*

This finding indicated the opinion that a more liquid stock market can encourage investors to equity market more information about firms, and allows them to alter their portfolios quickly

and cheaper. Thus, in more liquid stock markets, investment is less risky and facilitates long-term, more profitable investment.

#### 7.4.4.3 Market Activity

##### *Questionnaire Findings*

Questionnaire respondents were presented with six statements concerning market activity processes and were asked to rate degrees of concern in respect of stock market performance on a 5-point rating scale. There were similarities in the *means* based on the market activity score, as presented in Table 7.20. The statement about market activity issues that concerned respondents the most was: ‘The increased number of trading companies raises market activities in the stock market’ (*mean* 3.79, *Skewness* -0.87, *Kurtosis* -0.34). Increased market activity induces information acquisition which, in turn, increases the information content of share prices which enable firms to make better investment decisions. The next highest ranking statement was: ‘The increased value of new issues, including capital, generates market activities in the stock market’ (*mean* 3.78, *Skewness* -0.81, *Kurtosis* -0.31). As the value of a new issue increases, besides including companies most representative of their sector, factors such as market capitalisation and activity are taken into consideration. This finding also means that new issues can be considered as an indicator of value, taking prices into consideration.

The third highest ranking statement was: ‘A number of transitions are considered to be market activities that affect the stock market’ (*mean* 3.70, *Skewness* -0.80, *Kurtosis* -0.54). The results confirm the findings by Levine and Zervos (1998) and Rosseau and Wachtel (2000) that there is a significant relationship between stock market development measured by share value traded ratio (i.e., market activity) and economic growth. The results are also consistent with the argument put forward by Levine and Zervos (1998) and Rosseau and Wachtel (2000) that market activity is related to economic growth more significantly than market size. One might argue that the value-traded ratio, which measures the value of shares traded as ratio to national output, should be expected to have a significant relationship with economic growth. A country could have a relatively large stock market in terms of size, yet this might constitute a small proportion of its GDP. The overall *mean* of the section of market activity is 3.74, which shows that market activity factors are implemented in the stock market.

**Table 7.20 Descriptive Statistics for Market Activity**

Code	Rank	Statements	Valid N=203			
			Means <sup>a</sup>	SD	Skewness	Kurtosis
E.10	6	The value of trade is part of market activity	3.6897	1.17618	-0.777	-0.386
E.11	4	Volume of trade plays an important role in the stock market	3.7488	1.23117	-0.814	-0.468
E.12	3	A number of transitions are considered to be market activities that affect the stock market	3.7044	1.24731	-0.796	-0.542
E.13	1	The increased number of traded companies increases market activities in the stock market	3.7882	1.21029	-0.872	-0.338
E.14	2	The increased value of new issues, including capital, generates market activities in the stock market	3.7833	1.14853	-0.814	-0.306
E.15	5	The value of new issues acts as a percentage of GDP in the stock market	3.7291	1.25883	-0.753	-0.541

Notice a: The percentage of respondents who scored 4 “agree” and 5 “strongly agree”.

Source: Analysis of questionnaire survey data.

### ***Interview Findings***

Respondent interviewees in the stock market were asked about the market activity which most concerned them. Since interviewees were not required to rank order or rate the activity, the relevant measure was simply the number of times any given market activity was mentioned. Findings of the interviews, as depicted in Table 7.21, illustrate that the number of transactions was reported by eleven interviewees, whereas volume of trade and number of traded companies were each reported by ten interviewees. These findings support those reached by Atje and Jovanovic (1993), who show that trading volume (stock market development indicator) has a strong influence upon on economic growth, while bank credit does not.

**Table 7.21 Respondents' Interviews to Market Activity**

Market Activity	Valid N=12 interviews <sup>a</sup>	
	Number of Mentions	Per cent
Volume of trade	10	83.3
Value of trade	8	66.7
Number of traded companies	10	83.3
Number of transactions	11	91.7
Value of new issues (including capital increases)	6	50.0
Value of new issues (including capital increases) as a % of GDP	9	75.0

Notice a: Details totalled more than N = 12 and 100 per cent due to duplicate responses.

Source: Analysis of the data obtained from semi-structured interviews.

Interviewees were additionally required to explain their concerns surrounding market activity. The head of Inspection and Control Market Securities stated, “*The stock market in Libya is witnessing a marked improvement*”. He added, “*Despite the difficulties working to address the market the management is working on the preparation and processing of the rules and regulations governing the operation of the market with competent departmental staff, and the market will support sophisticated electronic systems to meet market needs in the Libyan environment*”. With regard to the aspirations sought by the securities market, “*the markets will strongly improve in the management of the progress of national economy if the necessary conditions are met*”.

#### 7.4.4.4 Market Concentration

##### Questionnaire Findings

Questionnaire respondents were presented with two statements regarding market concentration processes and were requested to rate degrees of concern in respect of stock market performance on a 5-point rating scale. Based on the *mean* of the market concentration score, as presented in Table 7.22, the market concentration issue that concerned respondents the most was expressed in the statement: ‘The percentage of large companies affects the value traded in the stock market’ (*mean* 3.75, *Skewness* -0.84, *Kurtosis* -0.30). The second highest ranked concern was in the statement: ‘The percentage of the largest company’s share in market capitalisation increases the market capitalisation share in the stock market’ (*mean* 3.72, *Skewness* -0.78, *Kurtosis* -0.46). Such a high concentration may not be desirable, since it affects liquidity. Furthermore, the large volume of trading activity may be mistakenly interpreted as a sign of a developed stock market. Therefore, any measure of stock market development should include a proxy for market concentration. Duyn (1993) carried out a large study on 50 emerging stock markets from various regions in the world in order to rank them. The study measured the market concentration by considering the share of market capitalisation of the ten largest stocks and the share of the value traded by them. The higher the *percentage*, the higher the market concentration and the lower the score. The results indicated that Taiwan emerges top with a total score of 164.14, followed by the Republic of Korea with a total score of 161.52 and then Malaysia with a total score of 158.89. In fact, these results show that the emerging stock market in South and East Asia could be considered as an advanced emerging stock market compared with other regions. In contrast, Tunisia was in the last position with a total score of only 22.42, close to Bangladesh with a total score of 27.59. An overall average of 3.74 is recorded indicating that the respondents agreed with the market concentration statements.

**Table 7.22 Descriptive Statistics for Market Concentration**

Code	Rank	Statements	Valid N=203			
			Means <sup>a</sup>	SD	Skewness	Kurtosis
E.16	2	The percentage of the largest company’s share in market capitalisation increases market capitalisation share in the stock market	3.7192	1.20024	-0.779	-0.456
E.17	1	The percentage of large companies affects the value traded in the stock market	3.7537	1.20987	-0.837	-0.295

Notice a: The percentage of respondents who scored 4 “agree” and 5 “strongly agree”.

Source: Analysis of questionnaire survey data.

**Interview Findings**

Interviewees from the stock market were asked about the market concentration aspects which most concerned them. Since they were not required to rank the order or rate the concentration, the relevant measure was simply the number of times that any given market concentration was mentioned. The findings of the interviews, as depicted in Table 7.23, reveal that the rate of the biggest companies' share in value traded was reported by eleven interviewees, whilst the rate of the largest companies' share in market capitalisation was reported by eight interviewees. The explanation suggests that stock market concentration refers to that select little scrip that dominates market activity. In certain emerging markets, while there may be both high capitalisation and volume, a few companies dominate the market.

**Table 7.23 Respondents' Interviews to Market Concentration**

Market concentration	Valid N=12 interviews <sup>a</sup>	
	Number of Mentions	Per cent
Rate of the largest companies' share in market capitalisation	8	66.7
Rate of the largest companies' share in value traded	11	91.7

Notice a: Details totalled more than N = 12 and 100 *per cent* due to duplicate responses.

Source: Analysis of the data obtained from semi-structured interviews.

In general, the findings of the interviews seem to be congruent with the result of the questionnaire survey findings and the mainstream of the empirical research in the field of economic reform programmes and developing stock markets. The establishment of the Libyan stock market was a major step on the path of developing financial resources through the creation of a sound capital market. According to Libyan stock market law, the objectives of the market are threefold: firstly, to mobilise savings by encouraging investments in the securities, thereby channelling savings to serve the interests of the national economy. Secondly, the aim is to regulate and control the issuance of securities and dealings in a bid to ensure soundness, ease and speed of transactions in accordance with the financial interests of the country. Finally, there is the aim of collecting and publishing information that will help investors evaluate all the quoted companies. These factors are related specifically to the transitional economies and the move from a centrally-controlled approach to a market mechanism through deregulation. In these circumstances, the fundamental role played by the stock markets is that of facilitating the reallocation of funds from agents (individuals) with an excess of capital to projects that have a shortage of funds, through the provision of investment opportunities. This implies that stock market development, by reducing the transaction costs of savings and investment, lowers the overall cost of capital in the economy.

## 7.5 SUMMARY AND CONCLUSION

This chapter has presented and analysed the findings of the data collected by questionnaires and semi-structured interviews. The descriptive analysis of the data is the first statistical technique used to provide a summary of the respondents' and their companies' demographic characteristics using means, frequencies and standard deviation. The data obtained from interviews was processed and analysed using a thematic approach in order to explain and support the results that emerged from the questionnaire.

The results revealed that economic reform programmes, macro-economic reform and financial maturity plays a significant role in the progress of the Libyan stock market in terms of its performance and contribution towards the Libyan economy. Thus, it is important to liberalise the economy, thereby mobilising savings and increasing the ratio of investment to GDP when considering the economic reform programme. This strategy will promote better development of the stock market and, hence, its performance. Libya can encourage national economic growth by means of an appropriate policy reform programme. The respondents in this research study additionally point out that the most important requirement of a bank-based system or a market-based system is better growth for the long-term. In a bank-based system, this implies mobilising savings, imposing a regulatory structure, addressing problems associated with excessively powerful banks and structuring activity. In a market-based system it is necessary to identify sound investment, allocate capital, increase transparency and accountability and finance activity. Findings suggest that market size, as measured by the value of listed shares divided by GDP, was considered the most significant indicator factor. This was followed by the total value traded ratio which measures the organised trading of firm's equity as a share of national output and, which therefore, is considered as the most significant positive factor related to the liquidity market. To this end, the increased numbers of traded companies increase market activity in the stock market where the percentage of the largest companies affects the value traded in the stock market.

The next chapter presents the results from the analysis of the data collected by the questionnaires, and which serve to examine the research hypotheses. These latter results examine the economic reform programme, macro-economic reform and financial maturity independent variables, tested by using the linear regression models for developing the Libyan stock market as dependent variables (as were mentioned in preceding chapter). The last hypothesis regarding best practice from emerging the stock market and its transferability to the Libyan situation and its context will be examined in Chapter Nine.

## CHAPTER EIGHT

### TEST OF RESEARCH HYPOTHESES

#### *Bivariate multivariate analyses and results*

#### 8.1 INTRODUCTION

This is the second of three chapters on data analysis. Chapter Six outlined the methods used in the collection of data for this research. Chapter Seven reported the descriptive analyses of the economic reform programme and the stock market performance in Libya including macro-economic reform and financial maturity. The aims of this chapter are to *present* statistics of the research *model* and results relating to the *hypothesis* testing. In order to test the research model hypotheses, cross-sectional<sup>38</sup> regression analysis is based on models of the correlation matrix analysis, multiple regression analysis statistical techniques, simple linear regression model technique statistical test are used<sup>39</sup> to ascertain whether both Libyan economy and stock market has changed following introduction of the economic reform programme in 1999 (see Chapter Two). Several factors were hypothesised to impact on an economic reform programme and performance of the stock market from a review of the relevant literature and previously published capital market studies, which adopted questionnaire surveys. A hypothesis is an unproven statement or proposition about a factor or phenomenon that is of interest to the researcher (Malhotra et al., 2003). One reason for Libya's adoption of the economic reform programme was the stagnating status of the country's economy during the previous decade. In the late 1990s macro-economic stability was the sole aim of such reforms. More specifically, it presents and discusses the results of the research model relating to the aim and first three objectives of this research.

The main aim of conducting this research is to determine the most appropriate model for the continued viability of a stock market mechanism in Libya and to consider an appropriate strategy for the Central Bank of Libya to undertake successful continuation of the stock market development. To achieve this aim, the following research objectives were formulated.

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<sup>38</sup> Bryman (2001) argues that cross-sectional data is usually provided with two variables or more, which are tested to determine the significance and directions of the association.

<sup>39</sup> The rationale and assumptions of using each statistic are discussed in Chapter Six: Subsection 6.10.1.2.



**Objective One:** To assess the success of the economic reform programme in Libya, specifically the deregulation, corporatisation, privatisation and liberalisation that has led to the inception of the Libyan stock exchange.

**Objective Two:** To identify the benefit of a stock market to the Libyan economy. This will involve examining the relationship between macro-economic reform variables and stock market performance variables.

**Objective Three:** To assess the performance of market-based economies, with particular reference to the emerging economy of Libya, and to evaluate current and best practice in financial deregulation.

**Objective Four:** To determine whether best practice from other emerging stock markets is transferable to the Libyan situation and context.

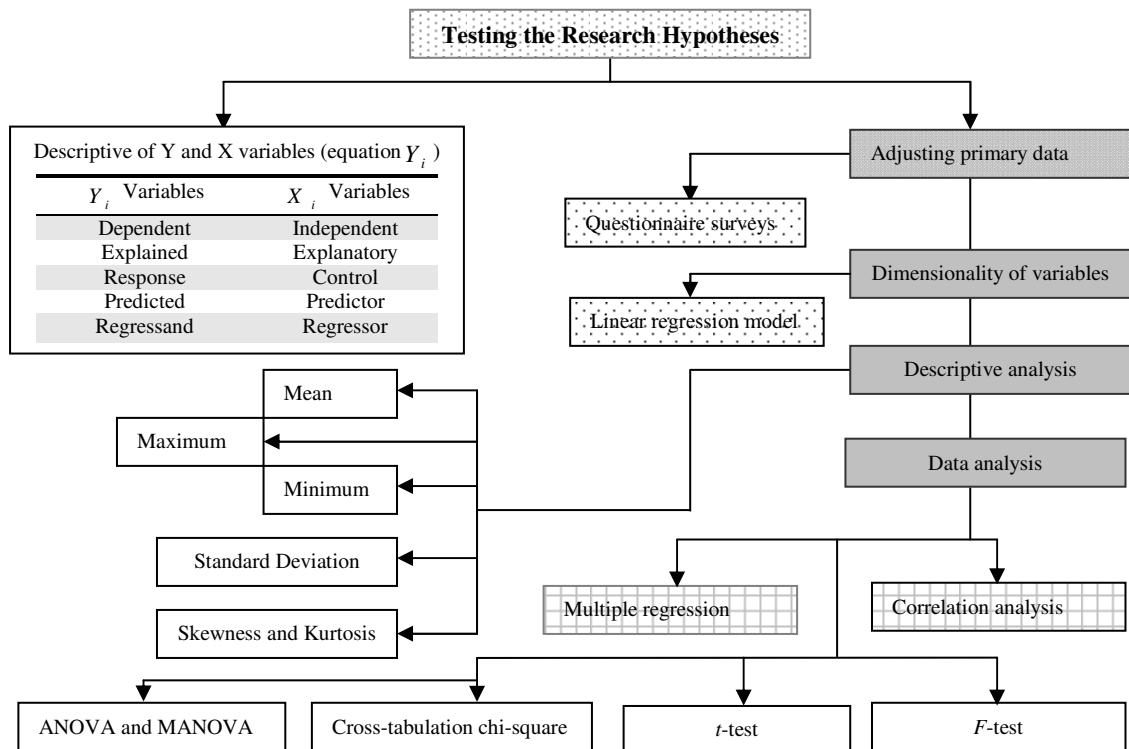
Within the Libyan context, hypotheses that are derived according to the economic reform programme are tested. Characteristics of the Libyan macro-economic reform, financial maturity and impact of stock market performance have not been investigated to date. The main purpose of this chapter is, therefore, to test the researcher's hypotheses. By carrying out this investigation, the researcher hopes that further investigation regarding stock market performance has been successfully accomplished. In this chapter, Section 8.2 reviews the descriptive statistics for research variables used in testing the hypotheses. This is followed by a brief justification of statistical techniques adopted to test the research models that were used to analyse data and examine the research hypotheses in Section 8.3. Section 8.4 presents the results of the modelling economic reform programme. Section 8.5 focuses upon the results of modelling macro-economic reform. Section 8.6 additionally focuses on the results from modelling financial maturity. Finally, in Section 8.7, a summary and conclusion to this chapter is provided.

## 8.2 DESCRIPTIVE STATISTICS FOR RESEARCH VARIABLES USED IN TESTING THE HYPOTHESES

Descriptive statistics of the research *model* that can be adopted for identification and integration to represent the potential variables were formulated to examine the impact of various independent variables of the economic reform programme (deregulation, corporatisation, privatisation and liberalisation), macro-economic reform such as interest rate, exchange rate, inflation rate, budget deficit, per-capita income, real GDP growth rate and

financial maturity, such as banking assets' ratio, domestic credit ratio and stock market capitalisation ratio on the dependent variable stock market performance. These dependent variables are proxied by the market activity, market size, market liquidity and market concentration (see Chapter Five). The research aim and objectives of the cross-sectional study on the structure of the economic reform programme and the performance of the stock market (see Chapters Three, Four and Five) related to the research hypotheses in Section 8.4 were additionally tested. The structure of the research hypotheses testing is illustrated in Figure 8.1 showing the framework of research data analysis.

**Figure 8.1 Framework of Research Data Analysis Excluding the Measurement Analysis**



Source: Developed for this research from Section 8.2.

Table 8.1 illustrates that descriptive statistics for the research variables were measured in this research, followed by the coding process, data were subjected to several statistical tests. The table also includes the *mean* as a measure of central tendency, *standard deviation* as a measure of distribution spread, *minimum* and *maximum* values and *skewness* and *kurtosis* values to check for each variable's normality<sup>40</sup>.

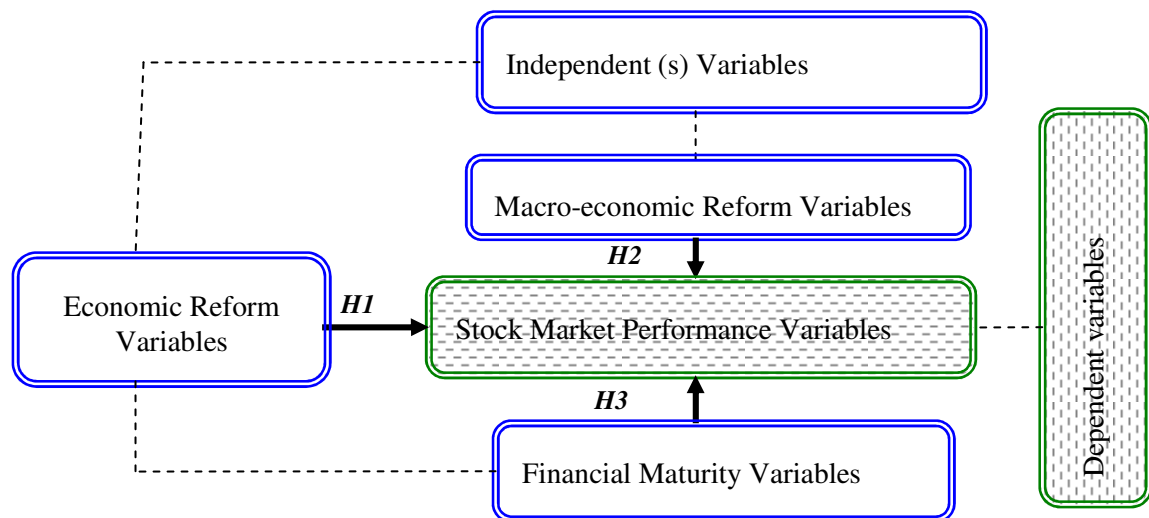
<sup>40</sup> Normality provides the degree to which distribution of sample data corresponds to a *normal distribution*, where normal distribution is a theoretical probability distribution in which the horizontal axis represents possible values of variables and the vertical axis represents the probability of those values occurring. Scores on the variables are clustered around the mean in a symmetrical, abnormal pattern known as the symmetrical bell-shaped or frequency curve (Hair et al., 2005: 38).

**Table 8.1 Descriptive Statistics for Research Variables**

Research Variables	Code Variables	Valid N=203					
		Mean	SD	Min	Max	Skewness	Kurtosis
<b>Economic Reform Programme</b>	<b>ERP</b>						
Deregulation	ERPD	4.1145	0.36724	3.00	4.88	-0.532	0.216
Corporatisation	ERPC	4.1350	0.33642	2.90	4.70	-0.831	1.167
Privatisation	ERPPV	4.0926	0.34996	2.80	4.70	-0.834	0.881
Liberalisation	ERPL	4.0847	0.48822	2.60	5.00	-0.829	0.431
<b>Macro-economic Reform</b>	<b>MER</b>						
Interest Rate	MERIR	3.7340	0.70765	1.40	5.00	-0.365	-0.151
Exchange Rate	MERER	3.9417	0.45901	2.17	4.83	-0.709	0.773
Inflation Rate	MERIFR	3.9631	0.50425	2.33	4.83	-0.768	0.526
Budget Deficit	MERBD	3.7545	0.47873	2.50	5.00	-0.465	-0.009
Per-capita Income	MERPCI	3.7340	0.51606	2.20	5.00	-0.304	0.141
Real GDP Growth Rate	MERGDP	3.6287	0.58879	1.88	4.75	-0.351	-0.413
<b>Financial Maturity</b>	<b>FM</b>						
Banking Assets Ratio	FMBA	3.8510	0.68145	1.75	5.00	-0.616	0.177
Domestic Credit Ratio	FMDC	3.7203	0.84795	1.44	4.89	-0.738	-0.090
Stock Market Capitalisation Ratio	FMSMC	3.5850	0.62079	1.50	5.00	-0.320	0.069
<b>Stock Market Performance</b>	<b>SMP</b>						
Stock Market Performance Variables	SMPV	3.7104	36607	2.47	4.47	-0.708	0.650

Source: Developed for this research from questionnaire survey data analysis.

Figure 8.2 shows that the structural statistical model test is divided into three models for the impact of stock market performance variables over an economic reform programme's variables, macro-economic reform variables and financial maturity variables. This model is adopted to develop a framework that can test the factors or variables of the independent variables (see further details in Chapter Six, Section 6.6). In the first model the hypothesised independent variables were tested in a single model based on the hypothesised relationship between this independent variable ERP and the dependent variables SMP. The second model statistic tests the relationship between the independent variables MER and the dependent variable SMP. The third stage of the structural model analysis tests the independent variable FM and the dependent variable SMP.

**Figure 8.2 The Primary Model for the Impact of Stock Market Performance**

Source: Developed for this research from Chapter Six, Subsection 6.6.2: The Primary Research Model.

Section 8.3 explains and discusses “how” and “why” the research variables specified in Figure 8.2 are mentioned and, additionally, the procedure framework undertaken to develop the structural model using the relationships between exogenous and endogenous variable analysis. Sections 8.4, 8.5 and 8.6 test the first, second and third models, respectively, referred to in Figure 8.2 and other subsection reports on the research hypotheses’ subsidiary.

### 8.3 STRUCTURAL MULTIPLE REGRESSION MODEL

All other statistical tests are located in Chapter Six for clear presentation. In order to achieve the research objective the researcher has applied a quantitative approach (questionnaire survey responses). The quantitative approach involves multiple regression analysis models that have been applied to test the research hypotheses using the *SPSS* Statistical Package for Social Science version 12.0. The purpose behind employing multiple regression analysis is to identify how much of the variance in the dependent variable will be explained when several independent variables are theorised to influence it simultaneously. Consequently, a multiple regression analysis test is conducted, by which the independent *predictor* variables are jointly regressed against the dependent *outcome* variable, in an effort designed to explain the variant and its predictions. Individual correlations collapse into what is termed a multiple *R* square value or multiple correlations. The square of multiple *R* is the amount of variance explained in the dependent variable by the predictors. When the  $R^2$  value, the *F*-test statistic and its significance level are known, it is possible to interpret the results from a multiple regression analysis (Sekaran, 2003; Hair et al., 2005; Field, 2005).

#### 8.3.1 The Simple Regression Linear Model

Multiple regression analysis model or both ANOVA and MANOVA, is a statistical technique that can be used to analyse the relationship between a single *dependent variable* and several *independent variables* and the objective of multiple regression analysis is to use the independent variables to predict the single dependent value selected by the researcher. Each dependent variable is weighted by the equation of the general model of multiple regressions to ensure maximum prediction from independent variables (Hair et al., 2005). The weights denote the ability to quantify precisely the relative significance of each proposed variable. Burton et al. (1989) define regression analysis as a statistical tool which may be utilised to learn more about the relationship between independent or explanatory variable(s) and dependent variables. To determine whether the assumption of linearity has been met, it is

necessary to examine the relationship between dependent and independent variables by utilising regression scatter plots.

From the previous discussion it is possible to test how the linear relationship between two variables could be measured using a simple linear correlation coefficient. Regression analysis, on the other hand, attempts to determine the functional relationship between two or more variables. In this case, one variable is being predicted by another. Thus, the relationship could be tested using correlation analysis. The best probabilistic general linear regression model, after several estimation trials, can be expressed as:

$$Y_i = \beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \dots + \beta_k X_{ik} + \epsilon_i$$

Figure 8.1 presents  $Y_i$  and  $X_i$  a variable, where  $Y_i$  is the outcome variable being predicted and is the dependent variable or the *regressand*. The predictor variable, denoted by  $X_i$ , is  $i$ th participants' score on the predictor variable and known as either the independent variable or the explanatory variable,  $\beta_1$  is the coefficient of the first predictor  $X_1$ ,  $\beta_2$  is the coefficient of the second predictor  $X_2$  and  $\beta_0$  is the intercept of that line.  $\beta_k$  is the coefficient of the  $n$ th predictor  $X_k$ . The portion  $\alpha + \beta X_i$  represents the deterministic type of the probabilistic model. The random error term,  $\epsilon_i$ , represents the collective unobservable influence of any committed variables (for more details see Appendix L: Section L.4).

### 8.3.2 The Correlation Matrix

Field (2005) observes that the correlation matrix is one of the most common and useful statistic analysis tests used for obtaining a general idea of the relationships between variable *predictors* and *outcome*, and for a preliminary search for *multicollinearity*. Notwithstanding, *multicollinearity* is a term reserved for describing the case when the intercorrelation of predictor variables in a regression model known as the independent variables is high. The model could have a high  $R^2$ , low  $\sqrt{MSM}$  and highly significant  $F$ -test statistics. The problem with collinearity is not with the fit of the model, but with estimates of the  $\beta_i$ . Another approach technique for testing the hypotheses in the critical t-value is estimated based on a level of significance ( $\alpha$ ); Berenson and Levine (1999) argue that critical values can be expressed on whether the level of statistics test is one-tailed or two-tailed. If a positive or negative relationship is hypothesised, then a one-tailed test of significance can be employed.

Hair et al. (2005) state that there are three suggested methods for assessing *multicollinearity*: the presence of high correlation (generally 0.90 and over); tolerance values; the variance inflation factor values (*VIF*). However, the variance inflation factor (*VIF*) showed no values that exceed the generally accepted maximum level of 10 (an indication of high levels of *multicollinearity*) and the tolerance values showed no values less than the maximum level of 0.2<sup>41</sup>. The *VIF* values range from 1.060 to 1.231, all well below 10, the value suggested by Myers (1990). Tolerance values range from 0.813 to 0.944 (see Table 8.5). None should be below 0.1, since tolerance = 1/*VIF*, also, Menard (1995) suggests that values below 0.2 are cause for concern. The average of the *VIF* values = 1.128. It is suggested by Bowerman and O'Connell (1990) that this should be no greater than 1. Therefore, this is indicating that *multicollinearity* problems may occur in this backward elimination model.

## 8.4 RESULTS FROM MODELLING ECONOMIC REFORM PROGRAMME

### 8.4.1 Testing of Hypothesis Theorising the Relationship between Economic Reform Programme and Stock Market Performance

#### *Empirical Results*

The hypotheses of this subsection are to investigate the relationship between the independent variables in terms of the economic reform programme (ERPD, ERPC, ERPP, ERPL) and SMP dependent variables. Achievement of the study's first objective can be realised via the survey questionnaire, which has been adopted to test Libya's stock market performance and whether or not it was affected following introduction of the economic reform programme. See more details on analysing data test in Appendix L; Section L.1. The following hypotheses are derived:

$H_0$     *There is no statistically significant relationship between economic reform variables and the stock market performance variable*

$H_1$     *There is a statistically significant relationship between economic reform variables and the stock market performance variable*

In this research,  $H_1$  does not represent a single hypothesis, but a series of sub-hypotheses which are developed in Subsection 8.4.2.

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<sup>41</sup> Field (2005:196) explained that for testing these two scores:

- If the largest *VIF* is greater than 10 then there is cause for concern (Myers, 1990; Bowerman and O'Connell, 1990).
- Tolerance under 0.1 indicates a serious problem.
- Tolerance under 0.2 indicates a potential problem.

### 8.4.1.1 Correlation Matrix Statistics

Correlation matrix statistics tests were applied to explore the correlation between economic reform programme and stock market performance variables. The output of this test, as presented in Table 8.2, indicated three points: it demonstrates the value of the Spearman's Rho correlation coefficient between every pair of variables (e.g. the ERPP and ERPL had a positive correlation with SMP variables,  $R = 0.347$ ;  $0.425$ ); the two-tailed significance of each correlation is displayed (e.g. the correlation of the ERPP and ERPL are significant,  $p < 0.01$ ); the number of cases contributing to each correlation ( $N = 203$ ) is displayed.

**Table 8.2 Correlation of Descriptive Statistics for Regression Analysis**

Variables	Spearman's Rho (2-tailed) (N=203)				
	SMPV	ERPD	ERPC	ERPP	ERPL
SMPV	-	$r = 0.169^*$ $p = 0.016$	$r = 0.147^*$ $p = 0.036$	$r = 0.347^{**}$ $p = 0.000$	$r = 0.425^{**}$ $p = 0.000$
ERPD		-	$r = 0.083$ $p = 0.238$	$r = 0.214^{**}$ $p = 0.002$	$r = 0.139^*$ $p = 0.048$
ERPC			-	$r = 0.203^{**}$ $p = 0.004$	$r = 0.071$ $p = 0.312$
ERPP				-	$r = 0.519^{**}$ $p = 0.000$
ERPL					-

Notice a: \* Correlation is significant at the 0.05 level (2-tailed); \*\* Correlation is significant at the 0.01 level (2-tailed).

Source: Analysis of SPSS output from questionnaire survey data.

With regard to the relationships between predictors and the outcome, two out of five economic reform programme variables had a significant positive correlation with stock market performance variables. Between these predictor variables, ERP and the outcome variables SMP ranged from Spearman's Rho = 0.083 and 0.071 with correlation of all four ERP being significant,  $p < 0.01$ , 2-tailed. The output Spearman's Rho test, in terms of the correlation matrix regression analysis did not reveal any significant correlation coefficient between two predictors which was  $p > 0.9$ . However, the highest correlation is between the ERPP, ERPL and SMP variables, respectively, which can be accepted at a significance level of  $p < 0.01$  (Spearman's Rho = 0.347 and Spearman's Rho = 0.425,  $p < 0.01$ , 2-tailed).

### 8.4.1.2 Overall Fit of the Summary Model

The aim of this section is to *present* and *analyse* the overall multiple regression model and, thus, explain whether the model is successful in illuminating and presenting what might contribute to the ERP variables in better responding and adapting to the influence in the SMP variables. The output of the SPSS test, as depicted in Table 8.3, reveals that the model summary included all four predictors being used, which provides some very significant information about the model fit option. From Table 8.3, the column labelled  $R$  is the value of

the multiple correlation coefficients among the *predictors* and the *outcome*. Therefore, large values of the multiple  $R$  represent a considerable correlation among predicted and observed values of the outcome. In fact, a multiple  $R$  of 1 represents a situation in which the model perfectly predicts observed data. As such, multiple  $R$  is a measure of how well the model predicts the observed data analysis.

**Table 8.3 Multiple Regression Model Summary <sup>(b)</sup>**

Model 1	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0.689 <sup>(a)</sup>	0.439	0.423	1.19381	0.439	15.450	4	198	0.000	2.214

Notice a: a Predictors: (Constant), ERPD, ERPC, ERPP, ERPL

Notice b: b Dependent Variable: SMP

Source: Analysis of SPSS output from questionnaire survey data.

The value of multiple  $R$  repetition for this model is 0.689, which is an indication that the model provides a reasonably good explanation of the observed values of the outcome variables of SMP variables. The next column in Table 8.3 provides the value of  $R^2$ , which is a measure of how much of the variability in the outcome is accounted for by the predictors. This value is 0.439, which means that the four ERP variables included as predictors in the model account for 43 *per cent* of the variation SMP variables. The adjusted- $R^2$ , however, affords an idea of how well the model generalises and, ideally, it is preferable if the value of the adjusted- $R^2$  is the same as, or close to, the value of  $R^2$ . With regard to this model, the difference between  $R^2$  and adjusted- $R^2$  is 0.02 ( $0.439 - 0.423 = 0.016$ ). This decrease means that if the model was derived from the population rather than a sample, it would account for approximately 2 *per cent* less variance in the outcome. The output of the change in the  $F$ -test, resulting from constructing the multiple regression model, is demonstrated in Table 8.3. The  $F$ -test is a measure of how much the model has improved the prediction of the *outcome* compared to the model's level of inaccuracy. In this context, a good model should have a large  $F$ -test *greater than one at least*<sup>42</sup>. As such, the model causes  $R^2$  to alter from zero to 0.439 and this change in the amount of variance explained gives rise to an  $F$ -test of 15.450, which is significant ( $P < 0.01$ ). At this point, the changed statistics exemplify variance incurred by adding new predictors to the model. Finally, the Durbin-Watson statistic tests whether the assumption of independent errors is tenable. The DW statistic, though, is only used for time series data, i.e. the data set being the values of the independent variables at fixed intervals of time. The value greater than 2 indicates a negative correlation between adjacent residuals and, for these data

<sup>42</sup> According to (Field 2005)  $F$ -test is a measure of the goodness-of-fit of the model, adjusted  $R^2$ , and a good model should possess more than 1 at least.



the value is 2.214, whereas a value  $2 < DW \leq 4$ , negative residual autocorrelation.  $MS_R$  is mean squares for the regression model and  $MS_E$  the residual mean squares. Based on analysis of variance ANOVA test of SPSS output, as presented in Table 8.4, findings were that the  $F$ -test is calculated by dividing average improvement in prediction by model  $MS_E$  by the average difference between the model and observed data  $MS_R$ .

**Table 8.4 ANOVA for Multiple Regressions <sup>(b)</sup>**

Model	1	Sum of Square	df	Mean Square	F	Sig.
1	Regression	88.076	4	22.019	15.450	0.000 <sup>(a)</sup>
	Residual	280.760	198	1.425		
	Total	368.837	202			

Notice a: a Predictors: (Constant), ERPD,ERPC, ERPP, ERPL

Notice b: b Dependent Variable: SMP

Source: Analysis of SPSS output from questionnaire survey data.

If the improvement, due to fitting the regression model, is much greater than the inaccuracy within the model, then the value of  $F$  will be greater than 1. For this model, the  $F$ -test being 15.450, which is significant ( $P < 0.01$ ). These results can be interpreted as meaning that the model significantly improved the ability to predict the outcome variable due to the “ $F$ -test is significant”. Table 8.4 shows the value of the sum of squares for model  $SS_M$  which represents the improvement in prediction resulting from fitting a regression line to the data rather than using the mean as an estimate of the outcome. This value is 88.076. The table additionally indicates the value of the residual sum of squares  $SS_R$ , which represents the total difference between the model and observed data with the value of 280.760. For  $SS_M$  and  $SS_R$ , the degrees of freedom  $df$  for each term is provided. In the case of improvement due to the model, this value is equal to the number of predictors (four *predictors in the case of this model*) and, for the  $SS_R$ , it is the number of observations (203) minus the number of coefficients in the regression model. The model has five coefficients *one for the constant and four the predictors*. Furthermore, the model has 198 degrees of freedom related to  $SS_R$ . The average sum of squares or mean squares MS is then calculated for each term, by dividing each SS by its  $df$ . The  $F$ -test is calculated by dividing the average improvement in prediction by the model  $MS_M$  by average difference between the model and observed data  $MS_R$ .

#### 8.4.1.3 Model Parameters

The section provided the output of parameters of the mutable regression model, which is presented in Table 8.5.

**Table 8.5 Coefficient of the Multiple Regression Model <sup>(a)</sup>**

Model	Unstandardised Coefficient		Standardised Coefficients	t	Sig.	95 % Confidence Interval for $\beta$		Correlations			Collinearity Statistics	
	$\beta$	Std. Error				Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance 1/VIF	VIF
(Constant)	-3.415	1.356		-2.518	0.013	-6.090	4.045	-0.741				
ERPD	0.253	0.239	0.069	1.060	0.290	-0.218	0.259	0.724	0.170	0.066	0.920	1.087
ERPC	0.386	0.266	0.096	1.454	0.148	-0.138	0.113	0.910	0.159	0.090	0.884	1.132
ERPP	0.317	0.129	0.170	2.462	0.015	0.063	0.242	0.570	0.301	0.153	0.813	1.231
ERPL	0.684	0.115	0.380	5.940	0.000	0.457	0.192	0.911	0.423	0.369	0.944	1.060

Notice a: a Dependent Variable: SMP.

Source: Analysis of SPSS output from questionnaire survey data.

In the current analysis this general model becomes:

$$\begin{aligned}
 SMP_i &= \beta_0 + \beta_1 ERPD_i + \beta_2 ERPC_i + \beta_3 ERPP_i + \beta_4 ERPL_i \\
 &= -3.415 + (0.253 ERPD_i) + (0.386 ERPC_i) + (0.317 ERPP_i) + (0.684 ERPL_i)
 \end{aligned}$$

The  $\beta$  – values inform the relationship between dependent variables SMP and each predictor. If the value is positive, this indicates a positive relationship between predictor and outcome, whereas a negative coefficient represents a negative relationship. Viewing the  $\beta$  – values presented in the first column, ERPD has significant positive relationship with the outcome variable SMP variable ( $\beta = 0.253$ ). Similarly, ERPC ( $\beta = 0.386$ ), ERPP ( $\beta = 0.317$ ) and ERPL ( $\beta = 0.684$ ) respectively. In these contacts, the  $\beta$  – values reveal to what degree each predictor affects the outcome if the effects of all other predictors are held constant. The output from t-test is considered, as presented in Table 8.5, in order to establish whether a  $\beta$  – value is substantially different from zero. Thus, t-test is measured by whether or not the predictor is offering a significant contribution to the model. Accordingly, if the t-test associated with a  $\beta$  – value is significant (e.g. if the value in the column labelled Sign. is less than 0.01 or 0.05) then the predictor is creating a significant contribution to the model. Similarly, the value of Sig. and the larger the value of t-test, the greater the contribution of that predictor is. From this model, only one predictor, which is liberalisation programme ( $t = 5.940$ ,  $P < 0.01$ ), emerged as a significant predictor of the ERP influencing the SMP variables. Standardised versions of the  $\beta$  – values are, in many ways, easier to comprehend because they are not dependent on the units of measurement of the variables. The standardised beta-values provided by SPSS and presented in Table 8.5 reflect the number of standard deviations that the *outcome* will alter, as a consequence of one standard deviation change in the predictor. All the standardised  $\beta$  – values are measured in standard units and so are directly comparable. The standardised  $\beta$  is representing the direct effect of its indicator on the outcome regardless of the amount of relationship *correlation* between this indicator and other indicators in the model, which cause the amount of indirect effect of this indicator on the outcome via the other indicators correlated

with it. Hence, they provide a superior insight into the importance of a predictor in the model. In the finding from Table 8.5, it is noted that liberalisation has the highest standardised  $\beta$ -value 0.684, indicating that this variable has the highest degree of significance in the model, compared with other predictors. This supports the result obtained from the t-test, in that the deregulation programme also emerged as the most significant predictor of SMP variable.

#### 8.4.2 Subsidiary Hypotheses

The relationship between each variable of independent variables of economic reform programme and dependent variables in stock market performance, four secondary hypotheses were formulated to be tested. Subsections 8.4.2.1, 8.4.2.2, 8.4.2.3 and 8.4.2.4 test, respectively, the first model referred to in the research. Variables specified in Figure 8.2 are measured between ERP independent variables and SMP dependent variable.

##### 8.4.2.1 Deregulation

###### *Test Hypotheses of Deregulation*

$H_0$      *Deregulation has a significant negative effect on the stock market performance*

$H_{1.1}$      *Deregulation has a significant positive effect on the stock market performance*

Deregulation programme is the first dimension of ERP variables, as presented in Table 8.6, multiple regression model, which is the ERPD independent variables and SMP variables as dependent variables. Reviewing the hypothesised regression model revealed  $\beta = 0.644$ ,  $b = 0.174$  and  $t\text{-value} = 2.503$  resulting in the completely standardised coefficient of ERPD as positive significant at 0.05 level,  $P < 0.05$ . Controlling for all other variables, the correlation matrix coefficient between the deregulation programme and stock market performance variables, was positively significant (Spearman's  $Rho = 0.169$ ,  $p = 0.016$ , 2-tailed). Results of the coefficient correlation analysis indicated that the ERPD effect is indirect, and the results of SMP variables confirmed the direct relationship (i.e.  $ERPD \rightarrow SMP$ ). Results of the regression analysis revealed a positive effect deregulation programme on stock market performance. Thus,  $H_0$  is rejected and the alternative hypothesis  $H_{1.1}$ , which states that deregulation has a significant positive effect on stock market performance is accepted.

**Table 8.6 Coefficient of the Multiple Regression Model <sup>(a)</sup>**

Model	Unstandardised Coefficient		Standardised Coefficients	t	Sig.	95 % Confidence Interval for $\beta$		Collinearity Statistics		Durbin-Watson	
1	$\beta$	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance 1/VIF	VIF		
(Constant)	0.485	1.062		0.457	0.648	-1.610	2.580			2.231	
<b>ERPD</b>	0.644	0.257	0.174	2.503	0.013	0.136	1.151	1.000	1.000		
$R^2$	0.331										
<b>Adjusted <math>R^2</math></b>	0.320										
<b>F</b>	6.263 $P < 0.05$										

Notice a: a Dependent Variable: SMP.

Source: Analysis of SPSS output from questionnaire survey data.

It was argued in the literature (McKinnon, 1973; Shaw, 1973; Fry, 1982; Cho, 1988) that, in theory, deregulation of financial sectors in most developing countries is vital for an efficient distribution of economic resources, which has increased considerable leverage. Lombardo and Pagano (2000) argue that the legal and institutional environment has a significant impact on expected returns. Laporta et al. (2005) found that legal systems affect financial systems and political change. Arlman (2003: 236) mentions: “[A] strong and modernised EU financial legislation should be beneficial not only for the securities markets but more importantly for the EU economy as a whole. An efficient and integrated securities market is vital in the process of raising the level of competitiveness, the efficient allocation of capital, mobilising savings and disciplining management”. Rajan and Zingales (1998), therefore, claim that countries with poor legal financial systems benefit from a bank-based system, as an enhanced legal financial system improves the financial market-based system. Barth et al. (2004, 2005) demonstrate that regulatory systems and supervisory practice is crucial in promoting information disclosure and private sector enterprise. In the Libyan context, deregulation was the first step related to the change with overall function of financial institutions and economic activity. These change origins are related specifically to the transitional economies, such as the deregulation of the economy from a centrally controlled to a market mechanism and the change of companies’ objectives from maintaining national goals to profit-making.

#### 8.4.2.2 Corporatisation

##### *Test Hypotheses of Corporatisation*

$H_0$  Corporatisation has a significant negative effect on stock market performance

$H_{1,2}$  Corporatisation has a significant positive effect on stock market performance

Corporatisation programme is the second dimension of ERP variables, as presented in Table 8.7, multiple regression model, which is the ERPC independent variables and SMP variables as dependent variables. Corporatisation of economic reform programme, when entered into the hypothesised regression model, revealed  $\beta = 0.650$ ,  $b = 0.161$  and  $t\text{-value} = 2.310$  resulting in

the completely standardised coefficient of ERPC being positive significant at 0.05 level,  $P < 0.05$ . Controlling for all other variables, the correlation matrix coefficient between corporatisation programme and stock market performance variables, was positively significant (Spearman's Rho = 0.147,  $p = 0.036$ , 2-tailed). Results of the coefficient correlation analysis indicated that the ERPC effect is indirect, and the results of SMP variables confirmed the direct relationship (i.e.  $ERPC \rightarrow SMP$ ). Regression analysis results in Table 8.7 revealed a positive effect corporatisation programme on stock market performance. Hence,  $H_0$  is rejected and the alternative hypothesis  $H_{1,2}$  which states that corporatisation has a significant positive effect on stock market performance is accepted.

**Table 8.7 Coefficient of the Multiple Regression Model <sup>(a)</sup>**

Model	Unstandardised Coefficient		Standardised Coefficients	t	Sig.	95 % Confidence Interval for $\beta$		Collinearity Statistics		Durbin-Watson
	$\beta$	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF	
1										
(Constant)	0.446	1.167		0.382	0.703	-1.855	2.748			
ERPC	0.650	0.281	0.161	2.310	0.022	0.095	1.205	1.000	1.000	2.207
$R^2$	0.271									
Adjusted $R^2$	0.258									
F	5.334 $P < 0.05$									

Notice a: a Dependent Variable: SMP.

Source: Analysis of SPSS output from questionnaire survey data.

As earlier explained in Chapter Two, the Libyan economy has experienced two major changes during the last 35 years. The first change started in the mid-1970s with the banning of private ownership and the nationalisation of all economic activities. The second wave was in the opposite direction and started officially in 1988, which was followed by further steps over the early years of 1990s<sup>43</sup>: privatisation of many state-owned companies; decline in the state support of those companies, represented by the imposition of equal foreign exchange rates<sup>44</sup>, allowing foreign products to penetrate the domestic market; etc., aiming to reform the economy towards a market-based system and to provide an opportunity for the private sector to contribute to the economy and overcome the difficulties that the economy had encountered. Most Libyan companies have, positively or negatively, been affected by these economic changes, which have resulted in a dramatic deterioration in the financial performance of most of the state-owned companies in particular.

<sup>43</sup> Law No. 8 was issued in 1988 aiming to reorganise the private ownership of economic activities such as corporations, partnerships and joint stock companies.

<sup>44</sup> Special foreign currency exchange rates were applied to the state-owned sector, allowing them to exchange one LD for about 3.50 US\$, while the situation was opposite for the private companies, which were exchanging 3.5 LD for one US\$. This situation gave the state-owned companies advantages in costs when they imported foreign raw materials and paid foreign employees (the cost was ten times more for private companies than for the state-owned companies).

### 8.4.2.3 Privatisation

#### Test Hypotheses of Privatisation

$H_0$  Privatisation has a significant negative effect on stock market performance

$H_{1.3}$  Privatisation has a significant positive effect on stock market performance

The privatisation programme is the third dimension of ERP variables, as presented in Table 8.8, multiple regression model, which is the ERPP independent variables and SMP variables as dependent variables.

**Table 8.8 Coefficient of the Multiple Regression Model <sup>(a)</sup>**

Model	Unstandardised Coefficient		Standardised Coefficients	t	Sig.	95 % Confidence Interval for $\beta$		Collinearity Statistics		Durbin-Watson
	$\beta$	Std. Error				Lower Bound	Upper Bound	Tolerance 1/VIF	VIF	
1										
(Constant)	0.960	0.498		1.927	0.055	-0.022	-0.022			
<b>ERPP</b>	0.560	0.126	0.351	4.457	0.000	0.312	0.312	1.000	1.000	2.258
$R^2$	0.301									
<b>Adjusted <math>R^2</math></b>	0.290									
<b>F</b>	19.861 $P < 0.01$									

Notice a: a Dependent Variable: SMP.

Source: Analysis of SPSS output from questionnaire survey data.

Privatisation of the economic reform programme, when entered into the hypothesised regression model, revealed  $\beta = 0.560$ ,  $b = 0.351$  and  $t\text{-value} = 4.457$  reflecting that the completely standardised coefficient of ERPP is positively significant at 0.01 level,  $P < 0.01$ . Controlling for all other variables, the correlation matrix coefficient between the privatisation programme and stock market performance variables, was highly positively significant (Spearman's  $Rho = 0.347$ ,  $p < 0.01$ , 2-tailed). The results of the coefficient correlation analysis indicated that the ERPP effect is indirect and the results of SMP variables confirmed the significant direct relationship (i.e.  $ERPP \rightarrow SMP$ ). Results of the regression analysis in Table 8.8 revealed a positive effect privatisation programme on stock market performance. Thus,  $H_0$  is rejected and the alternative hypothesis  $H_{1.3}$ , which states that privatisation has a significant positive effect on the stock market performance, is accepted.

In Chapter Five it was argued that a privatisation programme assists in increasing both the market value of stocks and the number of listed companies. The privatisation programme should, therefore, be allocated, according to a number of authors (i.e. El-Naggar, 1989; Boubakri and Cosset, 1998; Claessens and Djantov, 2000; Megginson and Netter, 2001; Cook and Unhida, 2003; Omran, 2004), as one of the most critical issues in the field of current economy in developed and developing countries. Empirical work by Perotti and Van Oijen

(2001) highlights that the effect of privatisation on market development may be indirect. This may provide some explanation to Euromoney (1993, 1994), which indicated that Malaysia's 1992 market capitalisation increased about 30 *per cent*, contributed to by the privatised sector. Mexico's market's capitalisation in 1993 had major listed firms, representing about 18 *per cent* of the total. In 1994, in Argentina, the shares of YPF, Telecom and Telephonic contributed some 50 *per cent* of total market capitalisation. Within the same year Chile listed three of its largest companies on the exchange which were all privatised firms, with a market value of over 10 billion US\$, representing almost 25 *per cent* of market capitalisation.

With respect to Libya, transfer of ownership began in 1987 by sharing returns on investment with employees: profits are divided among production elements (worker, machine, capital) according to a specific accounting system. Transfer of ownership was governed by the People's Committee Resolution no.447 of 1987, which was the first step of the Libyan privatisation programme. In 1994, 145 government plants were transferred to the private sector with immediate effect. In 1995, a further 295 government plants were transferred to employee ownership. Based upon a chapter from the Green Book (partners not workers), law no.9 in 1985 and the GPC Resolution no.313 of 2003, the Libyan government announced its intention to privatise a further 360 ownership plants in the industrial and agricultural sectors (see Appendix A). This suggests that, in the Libyan context, privatisation has shown many similarities to privatisation programmes that have been implemented in other emerging economies.

#### **8.4.2.4 Liberalisation**

##### ***Test Hypotheses of Liberalisation***

$H_0$      *Liberalisation has a significant negative effect on stock market performance*

$H_{1.4}$      *Liberalisation has a significant positive effect on stock market performance*

The liberalisation programme is the fourth dimension of ERP variables, as presented in Table 8.9, multiple regression model, which is the ERPL independent variables and SMP variables as dependent variables. Liberalisation of economic reform programme, when entered into the hypothesised regression model, revealed  $\beta = 0.746$ ,  $b = 0.413$  and  $t\text{-value} = 6.425$  resulting in the completely standardised coefficient of ERPL as positive significant at 0.01 level,  $P < 0.01$ . Controlling for all other variables, the correlation matrix coefficient between liberalisation programme and stock market performance variables, was highly positively significant (Spearman's  $Rho = 0.425$ ,  $p < 0.01$ , 2-tailed). Results of coefficient correlation analysis

indicated that the ERPL effect is indirect, and the results of SMP variables confirmed the significant direct relationship (i.e.  $ERPL \rightarrow SMP$ ). The results of the regression analysis, in Table 8.9, revealed a positive effect liberalisation programme on stock market performance. Thus,  $H_0$  is rejected and the alternative hypothesis  $H_{1.4}$ , which states that liberalisation has a significant positive effect on the stock market performance, is accepted.

**Table 8.9 Coefficient of the Multiple Regression Model <sup>(a)</sup>**

Model	Unstandardised Coefficient		Standardised Coefficients	t	Sig.	95 % Confidence Interval for $\beta$		Collinearity Statistics		Durbin-Watson
	$\beta$	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance 1/VIF	VIF	
1										
(Constant)	0.201	0.465		0.433	0.665	-0.715	1.117			
<b>ERPL</b>	0.746	0.116	0.413	6.425	0.000	0.513	0.975	1.000	1.000	2.257
$R^2$	0.520									
<b>Adjusted <math>R^2</math></b>	0.512									
<b>F</b>	41.283 $P < 0.01$									

Notice a: a Dependent Variable: SMP.

Source: Analysis of SPSS output from questionnaire survey data.

The results support the findings of an assessment of studies by Cho (1986) who examined the link between stock market development and financial liberalisation, using data for 32 developing countries during the period 1978 to 1990. He discovered a significant positive correlation between the level of stock market development and financial liberalisation; the results indicate that the correlation is strong among Asian economies but not within other emerging economies. Alternatively, studies by Bekaret and Harvey (1998), Henry (2000a), Froot et al. (2001) found there to be a positive correlation between liberalisation and stock market performance. Stulz (1997) and Mishkin (2001) argue that liberalisation can help improve financial infrastructure, reducing problems of moral hazard and raise further the availability of credit. Additionally, liberalisation and the consequent development of a country's financial sector tends to greatly facilitate economic growth, as shown in papers such as those of King and Levine (1993), Jayaratne and Strahan (1996) and Levine (2000).

The Libyan economy, which was one of the most promising among MENA countries during the 1970s, began to experience some structural problems towards the end of the 1980s. As mentioned earlier in greater detail in Chapter Two, the government had attempted to liberalise its economy twice before, from 1987 to 1990, and then in a second wave in the later 1990s and the initial years of the new century. After ten years of international economic sanctions related to the Lockerbie case of 1988, the Libyan authorities decided to remove significant control on economic and financial institutions. This may provide some explanation for the liberalisation that has generally accompanied a fundamental deregulation of domestic banking sector, including the financial market and foreign trade to achieve increasing economic growth.



### 8.4.3 Discussion: Findings from Testing the Economic Reform Programme Hypotheses

The aim of this section is to *present* the overall multiple regression model and hypotheses, that is, to explain whether there is a relationship between the economic reform programme (independent/predictor variables) and stock market performance (dependent/outcome variables). The output of the *SPSS* test, as depicted in Table 8.10, reveals the hypotheses of an economic reform programme relating to the first research objective. These results offer very significant information about the model fit under study with those accepted and rejected hypotheses.

**Table 8.10 Structural Model Results for Scope of Testing Hypotheses**

Hypotheses		$\chi^2$	df	Relationship with SMP variables		F-test	Sig.	Beta	t-test
				Expected	Comment				
ERPD	H <sub>0</sub> H <sub>1.1</sub>	126.537	15	- +	Rejected Accepted	6.263	0.013	0.174	2.503
ERPC	H <sub>0</sub> H <sub>1.2</sub>	110.286	16	- +	Rejected Accepted	5.334	0.022	0.161	2.310
ERPP	H <sub>0</sub> H <sub>1.3</sub>	106.891	18	- +	Rejected Accepted	19.861	0.000	0.301	4.457
ERPL	H <sub>0</sub> H <sub>1.4</sub>	145.103	14	- +	Rejected Accepted	41.283	0.000	0.413	6.425

Source: Analysis of SPSS output from questionnaire survey data.

The results of the majority of hypotheses are similar for using statistical methods. Acceptance or rejection of each hypothesis is based upon the result being statistically significant for at least two of the methods. Therefore, if one method is statistically significant at 1 *per cent* ( $P < 0.01$ ) or 5 *per cent* ( $P < 0.05$ ) level, the hypothesis will be accepted. In this context, each of the economic reform programme hypotheses is tested and justification that might explain reported outcomes is discussed. The hypothesised regression model resulted in a beta of 0.174 (t-value = 2.503) for the completely standardised coefficient of ERPD. Therefore, the regression path is significantly different from zero when  $t > 1.645$  ( $P < 0.05$ ),  $t > 1.96$  ( $P < 0.01$ ) for null hypothesis, (i.e. research questionnaire) beta estimate is considered significantly different from zero when  $t > 1.96$  ( $P < 0.05$ ),  $t > 2.576$  ( $P < 0.01$ ). Accordingly, this result supported H<sub>1.1</sub> of ERPD at 0.01 significant level  $P < 0.01$ , since the calculated t-test is greater than the critical t-test = 1.645.

These results suggest that several economic reform programme variables have various effects on stock market performance. Findings indicate that the F-test ( $F = 5.334$ ) was at significant level (Sig. = 0.000), hypothesis of ERPC which is accepted. The results of the t-test showed that ERPP has positive relations with the SMP variables at significant level of (Sig. = 0.000) since the calculated t-test is more than the critical t-test = 1.645. The t-test demonstrated a very

strong relationship between ERPL and SMP variables ( $t = 6.4$ ,  $F = 41.3$ ,  $\text{Sig.} = 0.000$ ), hypothesis  $H_{1.4}$  is accepted for ERPL. To conclude, the findings of four hypothesis models indicate that economic reform programme variables have a positive impact on the stock market performance variables. It would appear that deregulation, corporatisation, privatisation and liberalisation have become vital to long-term Libyan economic growth.

## 8.5 RESULTS FROM MODELLING MACRO-ECONOMIC REFORM

### 8.5.1 Testing of Hypothesis Theorising the Relationship between Macro-economic Reform and Stock Market Performance

#### *Empirical Results*

It is worth mentioning that the macro-economic reform variables are treated as independent variables when measuring their effect on the variables of stock market performance which are, in turn, treated as dependent variables comprising: market activity, market size, market liquidity and market concentration. Therefore, the performance of stock market variables depends heavily on the success of economic reform variables. In return, a well-performing stock market sustains economic growth and development. See more details on analysing data test in Appendix L; Section L.2. On testing the second objective in this study, that being whether or not the impact of macro-economic reform and the performance of stock market was affected, the null hypothesis  $H_0$  and associated secondary hypotheses are:

$H_0$     *There is no statistically significant relationship between the macro-economic reform variables and stock market performance variables*

$H_2$     *There is a statistically significant relationship between the macro-economic reform variables and stock market performance variables*

In this research,  $H_2$  does not represent a single hypothesis, but a series of sub-hypotheses which are developed in Subsection 8.5.2.

#### 8.5.1.1 Correlation Matrix Statistics

Correlation matrix statistics tests were applied in order to explore the correlation between macro-economic reform variables and stock market performance variables. The output of this test, as presented in Table 8.11, illustrated that in the relationships between predictors and outcome; one out of seven macro-economic reform variables had a significant positive correlation with stock market performance. Between these predictor variables MER and the

outcome variables, SMP ranged from Spearman's Rho = -0.005 and 0.182 with the correlation of all five MER being insignificant,  $P > 0.05$ , 2-tailed. Only one of five MERIFR found negative correlation with the outcome of SMP variables (Spearman's Rho = -0.042,  $P > 0.05$ , 2-tailed).

**Table 8.11 Correlation of Descriptive Statistics for Regression Analysis**

Variables	Spearman's Rho (2-tailed) (N=203)						
	SMPV	MERITR	MERER	MERIFR	MERBD	MERPCI	MERGDP
SMPV	-	$r = 0.109$ $p = 0.122$	$r = 0.172^*$ $p = 0.014$	$r = -0.042$ $p = 0.556$	$r = 0.049$ $p = 0.483$	$r = 0.044$ $p = 0.534$	$r = 0.086$ $p = 0.224$
MERITR		-	$r = 0.016$ $p = 0.823$	$r = 0.061$ $p = 0.388$	$r = 0.044$ $p = 0.533$	$r = 0.070$ $p = 0.320$	$r = 0.013$ $p = 0.854$
MERER			-	$r = 0.182^{**}$ $p = 0.009$	$r = 0.017$ $p = 0.814$	$r = -0.017$ $p = 0.809$	$r = -0.018$ $p = 0.803$
MERIFR				-	$r = 0.008$ $p = 0.906$	$r = 0.131$ $p = 0.062$	$r = -0.005$ $p = 0.939$
MERBD					-	$r = 0.079$ $p = 0.260$	$r = -0.077$ $p = 0.273$
MERPCI						-	$r = 0.082$ $p = 0.245$
MERGDP							-

Notice a: \* Correlation is significant at the 0.05 level (2-tailed); \*\* Correlation is significant at the 0.01 level (2-tailed).

Source: Analysis of SPSS output from questionnaire survey data.

The output of Spearman's Rho test, in terms of the correlation matrix regression analysis, did not reveal any significant correlation coefficient between two predictors that was  $p > 0.9$ . However, the highest correlation is between the MERIFR and MERER variables which can be accepted at a significance level of  $p < 0.01$  (Spearman's Rho = 0.182,  $p < 0.01$ , 2-tailed).

### 8.5.1.2 Overall Fit of the Summary Model

The aim of this section is to *present* and *analyse* the overall multiple regression model and, accordingly, explain whether the model is successful in illuminating and presenting what might contribute to the MER variables in better responding and adapting to the influence among the SMP variables. The output of the SPSS test, as depicted in Table 8.12, reveals that the model summary illustrated all six predictors are being used, which provides some very significant information about the model fit option.

**Table 8.12 Multiple Regression Model Summary <sup>(b)</sup>**

Model 1	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0.735 <sup>(a)</sup>	0.640	0.622	1.33554	0.640	2.225	6	196	0.042	2.013

Notice a: a Predictors: (Constant), MERITR, MERER, MERIFR, MERBD, MERPCI, MERGDP.

Notice b: b Dependent Variable: SMP

Source: Analysis of SPSS output from questionnaire survey data.

From Table 8.12, the value of multiple  $R$ -value for this model is 0.735, which is an indication that the model provides a reasonably good explanation of the observed values of the outcome variables of SMP variables. The next column in Table 8.12 provides the value of  $R^2$ , which is a measure of how much of the variability in the outcome is accounted for by predictors. This value is 0.640, which means that the four MER variables included as predictors in the model account for 64 *per cent* of the variation SMP variables. Adjusted- $R^2$ , however, affords an idea of how well the model generalises and, ideally, it is preferable if the value of the adjusted- $R^2$  is the same as, or close to the value of  $R^2$ . In relation to this model, the difference between  $R^2$  and adjusted- $R^2$  is 0.018 ( $0.640 - 0.622 = 0.018$ ). This decrease means that, if the model was derived from the population rather than a sample, it would account for approximately 1.8 *per cent* less variance in the outcome. As such, the model causes  $R^2$  to alter from zero to 0.640 and this change in the amount of variance explained gives rise to an  $F$ -test of 2.225, which is significant with a probability at 0.05 level. If improvement due to fitting the regression model is much greater than the inaccuracy within the model, then the value of  $F$  will be greater than 1. For this model, the  $F$ -test is 2.225, which is significant ( $P < 0.05$ ). These results can be interpreted as meaning that the model is significantly positive to predict the outcome variable due to the  $F$ -test being significant. Table 8.13 additionally indicates the value of the residual sum of squares  $SS_R$ , which represents the total difference between the model and observed data with the value of 349.596.

**Table 8.13 ANOVA for Multiple Regressions <sup>(b)</sup>**

	Model	Sum of Square	df	Mean Square	F	Sig.
1	Regression	23.813	6	3.969	2.225	0.042 <sup>(a)</sup>
	Residual	349.596	196	1.784		
	<b>Total</b>	<b>373.409</b>	<b>202</b>			

Notice a: a Predictors: (Constant), MRPITR, MRPER, MRPIFR, MRPPBD, MRPCI, MRPGDP.

Notice b: b Dependent Variable: SMP

Source: Analysis of SPSS output from questionnaire survey data.

### 8.5.1.3 Model Parameters

This section provides the output of the parameters of the mutable regression model, which is presented in Table 8.14.

**Table 8.14 Coefficient of the Multiple Regression Model <sup>(a)</sup>**

Model	Unstandardised Coefficient		Standardised Coefficients	t	Sig.	95 % Confidence Interval for $\beta$		Correlations			Collinearity Statistics	
	$\beta$	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance 1/VIF	VIF
(Constant)	-0.772	1.502		-0.514	0.608	-3.734	2.191					
MERITR	0.050	0.033	0.106	1.522	0.130	-0.015	0.116	0.113	0.108	0.105	0.990	1.011
MERER	0.110	0.038	0.204	2.896	0.004	0.035	0.186	0.194	0.203	0.200	0.963	1.039
MERIFR	-0.035	0.037	-0.068	-0.957	0.340	-0.108	0.037	-0.014	-0.068	-0.066	0.945	1.058
MERBD	0.017	0.037	0.032	0.456	0.649	-0.056	0.090	0.047	0.033	0.032	0.984	1.017
MERPCI	0.076	0.040	0.063	1.964	0.036	-0.043	0.114	0.068	0.064	0.062	0.971	1.030
MERGDP	0.094	0.086	0.076	1.983	0.017	-0.035	0.124	0.073	0.078	0.076	0.988	1.012

Notice a: a Dependent Variable: SMP.

Source: Analysis of SPSS output from questionnaire survey data.

In the current analysis this general model becomes:

$$\begin{aligned}
 SMP_i &= \beta_0 + \beta_1 MERITR_i + \beta_2 MERER_i + \beta_3 MERIFR_i + \beta_4 MERBD_i + \beta_5 MERPCI_i + \beta_6 MERGDP_i \\
 &= -0.772 + (0.050 MERITR_i) + (0.110 MERER_i) + (-0.035 MERIFR_i) + (0.017 MERBD_i) + \\
 &\quad (0.076 MERPCI_i) + (0.094 MERGDP_i)
 \end{aligned}$$

The  $\beta$  – values inform the relationship between dependent variables SMP and each predictor. If the value is positive, this indicates a positive relationship between predictor and outcome, whereas a negative coefficient represents a negative relationship. Viewing the  $\beta$  – values presented in the first column, MERGDP has the significant negative relationship with the outcome variable SMP variable ( $\beta = -0.772$ ). In these contacts, the  $\beta$  – values reveal to what degree each predictor affects the outcome if the effects of all other predictors are held constant. The output from t-test is considered, as presented in Table 8.14, in order to ascertain whether a  $\beta$  – value is significantly different from zero. Thus, t-test is measured by whether the predictor offers a significant contribution to the model. If the t-test associated with a  $\beta$  – value is significant (e.g. if the value in the column labelled Sign. is less than 0.05), then the predictor is creating a significant contribution to the model. Similarly, the larger the value of Sig. and the larger the value of t-test, the greater the contribution of that predictor is. From this model, only one predictor, MERER ( $t = 2.896$ ,  $P < 0.01$ ), emerged as a significant predictor of the MER influencing SMP variables. In addition, the collinearity statistics show (Table 8.14) VIF values ranging from 1.011 to 1.058, all well below 10, and tolerance values ranging from 0.963 to 0.990. None should be below 0.1. The average of the VIF values = 1.028 again indicates that multicollinearity problems may occur in this backward elimination model, so the coefficients of the variables cannot be interpreted through the regression model.

### 8.5.2 Subsidiary Hypotheses

Additionally, in order to achieve the first research aim, and the second of the study's objectives, several secondary hypotheses were formulated, all of which relate to the relationship period between each variable of macro-economic reform in dependent variables of stock market performance in the Libyan economy.

#### 8.5.2.1 Interest Rate

##### *Test Hypotheses of Interest Rate*

$H_0$  There is no statistically significant relationship between the interest rate variables and stock market performance variables

$H_{2.1}$  There is a statistically significant relationship between the interest rate variables and stock market performance variables

Interest rate is the first dimension of MER variables as presented in Table 8.15, multiple regression model, with the MERITR independent variables and SMP variables as dependent variables. Reviewing the hypothesised regression model revealed  $\beta = 0.054$ ,  $b = 0.113$  and  $t$ -value = 1.607 for the completely standardised coefficient of  $MERIR \rightarrow SMP$ . Therefore, the regression path is not significant since the correlation coefficient between interest rate and stock market performance was small and negligible (Spearman's Rho = 0.109,  $p = 0.122$ , 2-tailed). Accordingly, this result supported  $H_0$  and rejected  $H_{2.1}$  at 0.05 significant levels,  $P > 0.05$ .

**Table 8.15 Coefficient of the Multiple Regression Model <sup>(a)</sup>**

Model	Unstandardised Coefficient		Standardised Coefficients	t	Sig.	95 % Confidence Interval for $\beta$		Collinearity Statistics		Durbin-Watson
1	$\beta$	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance 1/VIF	VIF	
(Constant)	2.294	0.531		4.323	0.000	1.248	3.341			1.905
<b>MERITR</b>	0.054	0.033	0.113	1.607	0.110	-0.012	0.120	1.000	1.000	
$R^2$	0.282									
<b>Adjusted <math>R^2</math></b>	0.269									
$F$	2.581 $P > 0.05$									

Notice a: a Dependent Variable: SMP.

Source: Analysis of SPSS output from questionnaire survey data.

Findings suggested that interest rates have an insignificant relationship to stock market performance variables, which state that the latter increases as interest rates decrease. This cannot be rejected as interest rates affected all areas of stock market variables. This may provide some explanation for the relatively well-developed banking system in Libya; i.e. it does not play a prominent role involving interest rate problems. CBL Resolution no.16 in 2004

cut the interest rate on loans and credits granted for productive purpose from 7.0 to 3.0 *per cent*. This was followed by Resolution no.15 in 2005, related to reducing interest rates on all loans and credits granted by commercial banks to be equivalent to the rediscount rate of CBL plus a percentage not exceeding 2.5 *per cent*.

As a conclusion, it seems that interest rates have a significant impact on the stock market. When interest rates increase stock prices decrease, as investors prefer to invest in the stock market rather than banks. For instance, culturally, 97 *per cent* of Libyans are Muslim (Ward, 2008) and Islamic law (Sharia) interprets the Koran's principles for borrowing from commercial banks or ethical economy and investments due to associated interest rates "Reba" (or usury). Libya does not have Islamic banks to encourage its people to invest. "Reba", therefore, is defined in Islamic Sharia as exchanging cash of the same kind, with one party paying back extra at once or at later date. This type of transaction is forbidden in Islam and further applies to saving money in the bank and receiving interest in return. As a result, this offers investors a sound opportunity to transform their way of investment from banking to stock market. Moreover, it may be suggested that the new companies were established in recent times as the cost of capital became lower with the decrease in interest rates and, thus, could obtain required finance via the stock market. The results support findings of the literature review in many financial studies which examined alterations to the relationship between interest rate models and stock returns (i.e. Fama (1975, 1990); James et al. (1985), Asprem (1989), Schwert (1990), Lee (1992) and Canova and De Nicolo (2000)). For instance, Shiller and Beltratti (1992) find an indirect relationship between interest rates and stock returns. Other studies that have found a negative or insignificant relationship include Giovannini (1983, 1985), Reichel (1991) and Oshikoya (1992). Peavy (1992) discovered a negative relationship between interest rates and stock prices. Additionally, Baye and Jansen (1995) note that there is an unchanging relationship between interest rates and stock prices.

### 8.5.2.2 *Exchange Rate*

#### *Test Hypotheses of Exchange Rate*

$H_0$      *There is no statistically significant relationship between the exchange rate stability and stock market performance*

$H_{2.2}$    *There is a statistically significant relationship between the exchange rate stability and stock market performance*

Exchange rate stability is the second dimension of MER variables, as presented in Table 8.16, multiple regression model, which is the MERER independent variables and SMP variables as dependent variables.

**Table 8.16 Coefficient of the Multiple Regression Model <sup>(a)</sup>**

Model	Unstandardised Coefficient		Standardised Coefficients	t	Sig.	95 % Confidence Interval for $\beta$		Collinearity Statistics		Durbin-Watson
	$\beta$	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF	
1										
(Constant)	0.984	0.771		1.276	0.203	-0.536	2.503			1.987
<b>MERER</b>	0.105	0.037	0.194	2.810	0.005	0.031	0.179	1.000	1.000	
$R^2$	0.384									
Adjusted $R^2$	0.368									
F	7.898 $P < 0.05$									

Notice a: a Dependent Variable: SMP.

Source: Analysis of SPSS output from questionnaire survey data.

The review of the hypothesised regression model revealed ( $\beta = 0.105$ ,  $b = 0.194$  and  $t$ -value = 2.810) for the completely standardised coefficient of  $MERER \rightarrow SMP$ . Therefore, the regression path is positive significant at 0.01 level,  $P < 0.01$ . This result supported  $H_{2.2}$  since the calculated  $t$ -value is greater than the critical  $t$ -value = 1.645. Controlling for all other variables, the correlation coefficient between exchange rate and stock market performance variables was positively significant (Spearman's  $Rho = 0.172$ ,  $p = 0.014$ , 2-tailed). Results of the coefficient correlation analysis indicated the direct relationship between MERER and SMP variables, in which it can be concluded that the notion that stock market performance increases as the exchange rate increases cannot be rejected.

The relationship between exchange rate and stock market depends upon whether the country is import-dominant or export-dominant. There are several interesting studies in the literature which investigate this particular type of relationship. Most empirical studies, however, failed to establish a significant relationship between the exchange rate and stock prices (for example, Jorion, 1991 and Amihud, 1993), whilst there are other studies (Chow, 1997; Choi et al., 1998; De Santis and Cerard, 1998; Doukas et al., 1999; Patro et al., 2002) which discovered that stock returns are significantly affected by exchange rate fluctuations. Similar findings in the literature were evident in Kasman (2003) who examined the relationship between exchange rates and stock prices in emerging economies, specifically the Turkish market. He established that there is a stable relationship between exchange rate and stock prices in the long-term. The results additionally indicate that the causality relationship exists only from the exchange rate to the industry sector index which, in turn, affects currency.



In the Libyan context, the LD has been tied to the Special Drawing Rights (SDR) since June 2003, with LD 0.5175 per SDR unit, but it is altering against other foreign currencies. After more than five years of operating with this system, it was found that the exchange rate is quite appropriate during this period for the Libyan economic policy and conditions, as agreed by the report of the Consultative Mission of the IMF that visited Libya in December 2005 (CBL report, 2002, 2007). Thus, as the exchange rate becomes more stable in the Libyan economy following government introduction of the economic reform programme, this may encourage foreign investors and financial institutions to invest in the stock market. The exchange rate stability affects stock market performance variables, which indicates that the fact that the stock market increases as the exchange rate stability increases cannot be rejected.

### 8.5.2.3 Inflation Rate

#### *Test Hypotheses of Inflation Rate*

$H_0$  *There is no statistically significant relationship between the inflation rate and stock market performance*

$H_{2,3}$  *There is a statistically significant relationship between the inflation rate and stock market performance*

Inflation rate is the third dimension of MERIFR variables, as presented in Table 8.17, multiple regression model, which is the MERIFR independent variables and SMP variables as dependent variables. Review of the hypothesised regression model revealed  $\beta = -0.037$ ,  $b = -0.014$  and  $t\text{-value} = -0.994$  for the completely standardised coefficient of  $MERIFR \rightarrow SMP$ . The value of  $R^2$  for the MERIFR variable is 0.290 which means that this variable is explained through such a model, with about 0.3 *per cent* of the variance of inflation rate. Hence, the regression path is not significant. The results of the correlation coefficient indicated an indirect and insignificant relationship between inflation rate and stock market performance variables, which was small and negative significant (Spearman's  $Rho = -0.042$ ,  $p = 0.556$ , 2-tailed). In fact, this relationship was negative and the results can support the hypothesis, which stated that stock market performance increases as inflation rate decreases. Consequently,  $H_0$  cannot be rejected as the inflation rate affected stock market performance variables.

**Table 8.17 Coefficient of the Multiple Regression Model <sup>(a)</sup>**

Model	Unstandardised Coefficient		Standardised Coefficients	t	Sig.	95 % Confidence Interval for $\beta$		Collinearity Statistics		Durbin-Watson	
1	$\beta$	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance 1/VIF	VIF		
(Constant)	3.278	0.755		4.340	0.000	1.789	4.768			1.880	
<b>MERIFR</b>	-0.037	0.036	-0.014	-0.994	0.406	-0.079	0.065	1.000	1.000		
$R^2$	0.290										
<b>Adjusted <math>R^2</math></b>	0.278										
<b>F</b>	2.693 $P > 0.05$										

Notice a: a Dependent Variable: SMP.

Source: Analysis of SPSS output from questionnaire survey data.

The results support the findings of Fama (1981, 1982) which established a negative relationship between inflation and economic activity, but a positive relationship between economic activity and stock prices. Benderly and Zwick (1985) support Fama's results. Other studies by Fama and Schwert (1977), Chance and Lane (1980), Lynge and Zumwalt (1980) and Wahlroos and Berglund (1986), among others, discover an evident negative relationship between expected inflation and stock price returns. Various other studies have shown an unexpected negative inflation effect in stock returns (Flannery and James, 1984 and Bae, 1990). Rapach (2002) also traced a negative relationship between inflation and real stock prices. Shiller and Beltratti (1992) identify a small correlation coefficient between inflation and stock returns. This finding additionally contradicts the idea that the level of inflation rate can depress or encourage investment in the stock market. In Libya, for instance, the inflation rate is not stable at the current time due to an increase in the proportion of public expenditure (especially the wages sector), besides the higher liquidity surplus and import costs, particularly of foodstuffs. In addition, decrease in inflation rate may offer a good incentive to investors to invest in the stock market. Furthermore, it will anticipate that investors will seek out new companies and secure the required finance for their business with less cost. On the other hand, investors may leave their investment in the bank, as savings there will be less profitable and attractive as interest rates are expected to decrease, as mentioned previously. This may lead some investors to prefer making the correct decision and invest in the stock market.

#### 8.5.2.4 Budget Deficit

##### *Test Hypotheses of Budget Deficient*

$H_0$  There is no statistically significant relationship between the budget deficit and stock market performance

$H_{2.4}$  There is a statistically significant relationship between the budget deficit and stock market performance

Budget deficit is the fourth dimension of MERBD variable as presented in Table 8.18, multiple regression model, which is the MERBD independent variables and SMP variables as dependent variables. The review of the hypothesised regression model revealed  $\beta = 0.025$ ,  $b = 0.047$  and  $t\text{-value} = 0.661$  for the completely standardised coefficient of  $MERBD \rightarrow SMP$ . Therefore, the regression path is not significant at 0.05 level,  $P < 0.05$ . Accordingly, this result did not support  $H_{2.4}$ , since the calculated  $t$ -value is less than the critical  $t$ -value = 1.645. Controlling for all other variables, the correlation coefficient between budget deficit and stock market performance variables was small and not significant (Spearman's  $Rho = 0.049$ ,  $p = 0.483$ , 2-tailed). The results of the coefficient correlation analysis models indicated an indirect relationship between MERBD and SMP variables. Thus, the hypothesis which can be stated, that stock market performance increases as budget deficit decreases, can neither be accepted nor rejected.

**Table 8.18 Coefficient of the Multiple Regression Model <sup>(a)</sup>**

Model	Unstandardised Coefficient		Standardised Coefficients	t	Sig.	95 % Confidence Interval for $\beta$		Collinearity Statistics		Durbin-Watson	
1	$\beta$	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance 1/VIF	VIF		
(Constant)	2.653	0.733		3.621	0.000	1.208	4.098			1.894	
<b>MERBD</b>	0.025	0.038	0.047	0.661	0.509	-0.049	0.099	1.000	1.000		
$R^2$	0.283										
<b>Adjusted <math>R^2</math></b>	0.269										
<b>F</b>	2.437	$P > 0.05$									

Notice a: a Dependent Variable: SMP.

Source: Analysis of SPSS output from questionnaire survey data.

From Chapter Five empirical studies, in previous discussion of the framework, the relationship between budget deficit and stock market performance is expected to be negative in terms of macroeconomic reform. In addition, the budget deficit may directly or indirectly affect stock market prices and returns via its effect upon both interest rates and inflation rate. Findings clarify that the budget deficit affects stock returns and prices negatively through the stock market performance as a whole. In theoretical studies, Tobin (1969), Blanchard (1981) and Shah (1984) contended that fiscal policy bears an impact upon stock prices. Similar findings in the literature were found in Darrat (1988), who investigated the fundamental effect of the relationship between stock market and budget deficit of quarterly data from the Canadian market covering the period 1960 to 1984, adopting a technique suggested by Granger (1980). He concluded that there is some evidence that a government's significant budget deficit is a determinant of stock prices. This may provide some explanation for the Libyan contexts. In 2006 public expenditure was about 23119.1 million LD, compared to 19547.8 million LD in 2005, which increased to approximately 4171.3 million LD or 21.3 *per cent*. This increase was

mainly assigned for salaries and bonuses but, additionally, it was an increase in the provisions of development budget for fundamental productive and service infrastructure projects (CBL, 2006). As a result, the Libyan government should adopt a serious decision policy to control public expenditure in future, which may affect the stock market price via economic growth in the long-term.

#### 8.5.2.5 Per-capita Income

##### Test Hypotheses of Per-capita Income

$H_0$  There is no statistically significant relationship between the per-capita income and stock market performance

$H_{2.5}$  There is a statistically significant relationship between the per-capita income and stock market performance

Interest rate is the first dimension of MER variables as presented in Table 8.19, multiple regression model, which is the MERPCI independent variables and SMP variables as dependent variables.

**Table 8.19 Coefficient of the Multiple Regression Model <sup>(a)</sup>**

Model	Unstandardised Coefficient		Standardised Coefficients	t	Sig.	95 % Confidence Interval for $\beta$		Collinearity Statistics		Durbin-Watson	
1	$\beta$	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance 1/VIF	VIF		
(Constant)	2.525	0.638		3.959	0.000	1.268	3.783			1.907	
MERPCI	0.038	0.040	0.068	1.964	0.036	-0.040	0.171	1.000	1.000		
$R^2$	0.398										
Adjusted $R^2$	0.376										
F	4.928	$P < 0.05$									

Notice a: a Dependent Variable: SMP.

Source: Analysis of SPSS output from questionnaire survey data.

The review of the hypothesised regression model revealed  $\beta = 0.038$ ,  $b = 0.068$  and  $t$ -value = 1.964 for the completely standardised coefficient of  $MERPCI \rightarrow SMP$ . Consequently, the relationship between per-capita income as an independent variable and stock market performance as dependent variables is not significant with a standard coefficient beta at 0.05 levels ( $P < 0.05$ ) of the variance of per-capita income. The result of the correlation coefficient analysis between MERPCI variable and SMP variables was small and significant (Spearman's  $Rho = 0.044$ ,  $p = 0.534$ , 2-tailed). Results of the coefficient correlation analysis models indicated the indirect relationship between per-capita income and SMP variables. Thus,  $H_0$  is rejected and the alternative hypothesis  $H_{2.5}$ , where it can be stated that there is a statistically significant relationship between the per-capita income and stock market performance, cannot be rejected, since the calculated  $t$ -value is greater than  $t$ -value = 1.645.

It was argued in the literature that higher per-capita income may affect many aspects of the economy and stock market performance. As noted, Gurley and Shaw (1955, 1960 and 1967) argued that financial development is a positive function of real income and wealth. Boyd and Smith (1996, 1998), however, contested that financial structure alters with income per-capita. Therefore, it can be concluded that, as per-capita income increased in the Libyan economy after it adopted the economic reform programme due to the increase in world oil prices and additional growth in production, this may well assist in increased interest by foreign investors. Oil production is expected to double to about 3 million barrels per day during 2012 resulting from modern techniques usage by international oil companies in research and prospecting. Indeed the total volume of major investment projects announced in the various sectors (of hydrocarbons and tourism) is some 35 billion US\$. As a result, there is a greater supply of money within society to save and invest, which ultimately benefits the stock market. Market size and activity may be affected positively, too, as the more money people have, the greater ability there is to invest and inject money in stock market investments. To summarise, the evidence emphasises that stock market performance increases as per-capita income in terms of macro-economic reform increases cannot be accepted or rejected. Instead, it can be argued that significantly differing per-capita income affects levels across the stock market performance area.

#### 8.5.2.6 GDP Growth Rate

##### *Test Hypotheses of GDP Growth Rate*

$H_0$      *There is no statistically significant relationship between the real GDP growth rate and stock market performance*

$H_{2.6}$    *There is a statistically significant relationship between the real GDP growth rate and stock market performance*

GDP growth rate is the sixth dimension of MER variables, as presented in Table 8.20, multiple regression model, which is the MERGDP growth rate independent variables and SMP variables as dependent variables. The review of the hypothesised regression model revealed  $\beta = 0.094$ ,  $b = 0.076$  and  $t\text{-value} = 1.983$  for the completely standardised coefficient of  $MERGDP \rightarrow SMP$ . Confidence limits demonstrate that it can be assumed, with 95 per cent confidence, that the true population regression coefficient for GDP growth rate is between -0.034 and 0.123. Therefore, the regression path is not significant at 0.05 level,  $P < 0.05$ . Subsequently, this result was rejected at 0.05 significant levels. Controlling for all other variables, the correlation coefficient between GDP growth rate and stock market performance

variables was insignificant (Spearman's  $Rho = 0.086$ ,  $p = 0.224$ , 2-tailed). The results of the coefficient correlation analysis indicated that GDP growth rate effect is indirect. Nevertheless, the results of regression analysis revealed a positive effect of independent variable GDP growth rate on dependent variables of stock market performance. Findings suggested that  $H_0$  is rejected and the alternative hypotheses  $H_{2,6}$ , which states that there is statistically significant relationship between the real GDP growth rate and stock market performance variables, is accepted.

**Table 8.20 Coefficient of the Multiple Regression Model <sup>(a)</sup>**

Model	Unstandardised Coefficient		Standardised Coefficients	t	Sig.	95 % Confidence Interval for $\beta$		Collinearity Statistics		Durbin-Watson	
1	$\beta$	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance 1/VIF	VIF		
(Constant)	2.473	0.647		3.823	0.000	1.198	3.749			1.887	
<b>MERGDP</b>	0.094	0.086	0.076	1.983	0.017	-0.034	0.123	1.000	1.000		
$R^2$	0.401										
<b>Adjusted <math>R^2</math></b>	0.390										
<b>F</b>	4.621 $P < 0.05$										

Notice a: a Dependent Variable: SMP.

Source: Analysis of SPSS output from questionnaire survey data.

In this finding, it can be argued that there is a positive relationship between the real GDP growth rate and stock market performance, which cannot be rejected. This variable requires greater attention from the Libyan government in order to achieve a high standard of living for its citizens. The results support the findings of Chapter's Five literature review. This can be explained by a number of subsequent studies that have adopted the growth regression framework related to stock market performance (see e.g. Dowrick, 1992; King and Levine, 1993a; Atje and Jovanovic, 1993; Levine and Zervos, 1995, 1996 and 1998; Harris, 1997; Levine et al., 2000). Levine and Zervos (1995) used cross-country regression for 49 countries. They identified significant correlation between GDP growth rates and stock market development. Demirgüç-Kunt and Levine (1999) found that the correlation between GDP per-capita and market capitalisation is about 0.3 and is significant at the 0.05 level. The findings additionally identified found the correlation between GDP per-capita, and both total value trade as a share of GDP and turnover ratio are almost 0.4 and significant at the 0.01 level. In the context of the IMF visiting staff report of 12 November 2007, it was anticipated that real GDP in Libya would have increased by 6.8 *per cent* in 2007 compared to a rate of 5.2 *per cent* in 2006, due to rapid growth in non-oil activities of about 7.5 *per cent*, and robust growth in oil production of 4.7 *per cent*. Consequently, the Libyan authorities are planning to develop the non-oil sector via the private sector to support the projects of small and medium-sized enterprises, which would contribute to increasing economic growth rates and creating new

jobs. These should focus efforts on training and reduce administrative procedures besides supporting property rights, regulation systems and stock market development.

### 8.5.3 Discussion: Findings from Testing the Macro-economic Reform Hypotheses

The SPSS outcomes in Table 8.21 summarise all previous results found in the multiple regression analysis tests conducted into the relationship between the six macro-economic reform independent variables and the dependent variables stock market performance under study with those accepted and rejected hypotheses. As shown in Table 8.21, there are two steps to using the hypotheses testing model. The first is to run a multiple regression model for each macro-economic reform, as explanatory variables upon all stock market performance, as a response variable. This step's output will demonstrate the results of fitting a multiple regression model, which describes the relationship between one independent variable and all dependent variables. The next step used the correlation matrix and ANOVA statistic analysis to look at the *P*-value and *F*-test. If the result giving independent variables is greater or equal to ten *per cent* level, this means there is not a statistically significant relationship and the variable should be excluded from the model. The general regression model will prove to be very simple. This is effected by eliminating insignificant variables, beginning with the variable that has a higher *P*-value and so on.

**Table 8.21 Structural Model Results for Scope of Testing Hypotheses**

<i>Hypotheses</i>		$\chi^2$	<i>df</i>	<i>Relationship with SMP variables</i>		<i>F</i> -test	<i>Sig.</i>	<i>Beta</i>	<i>t</i> -test
				<i>Expected</i>	<i>Comment</i>				
MERITR	H <sub>0</sub>	173.56	73	-	Accepted	2.581	0.110	0.113	1.607
	H <sub>2.1</sub>			+	Rejected				
MERER	H <sub>0</sub>	155.172	46	-	Rejected	7.898	0.005	0.194	2.810
	H <sub>2.2</sub>			+	Accepted				
MERIFR	H <sub>0</sub>	154.281	47	-	Accepted	2.693	0.406	-0.014	-0.994
	H <sub>2.3</sub>			+	Rejected				
MERBD	H <sub>0</sub>	167.522	47	-	Accepted	2.437	0.509	0.047	0.661
	H <sub>2.4</sub>			+	Rejected				
MERPCI	H <sub>0</sub>	177.655	48	-	Rejected	4.928	0.036	0.068	1.964
	H <sub>2.5</sub>			+	Accepted				
MERGDP	H <sub>0</sub>	148.690	46	-	Rejected	4.621	0.017	0.076	1.983
	H <sub>2.6</sub>			+	Accepted				

Source: Analysis of SPSS output from questionnaire survey data.

Table 8.21 provides that the results from the research hypotheses model indicated that there is a different significant relationship between macro-economic reform and stock market performance variables. It is useful to mention that this result appears consistent with a number of previous findings, which indicated that explanatory variables tend to have a more significant effect upon stock market performance variables. Nevertheless, the other variable seems to be far from the previous findings as the relationships tend to be insignificant, which

reject the hypotheses. For instance, the t-test identified an insignificant relationship between interest rate and stock market performance variables. Similarly, finding in inflation rate that there is no relationship with stock market performance, means these hypotheses cannot be accepted. For this research, given an emerging market, it is inevitable that the population sample is not ideal. Hence, there is a need to develop validated databases in the future as more data becomes available. Consequently, it would be possible to examine and identify any additional relationship between variables that could bear influence upon Libyan economy's financial market and could utilise different significant statistic analysis.

## 8.6 RESULTS FROM MODELLING FINANCIAL MATURITY

### 8.6.1 Testing of Hypothesis Theorising the Relationship between Financial Maturity and Stock Market Performance

#### *Empirical Results*

The aim of this section is to *present* and *analyse* the financial maturity variables which are treated as independent variables when measuring their effect on the variables of stock market performance. These are, in turn, treated as dependent variables. These latter are: market activity; market size; market liquidity; market concentration. In examining the challenge of the financial maturity in term of their ratios of banking assets, domestic credit and stock market capitalisation of GDP concerning stock market decisions, which may be influenced by business and personal goals. Thus, the survey questionnaire is formulated in order to test this research's third objective. See more details on analysing data test in Appendix L; Section L.3. The null hypothesis  $H_0$  and associated secondary hypotheses are:

$H_0$      *There is no statistically significant relationship between financial maturity variables and stock market performance*

$H_3$      *There is a statistically significant relationship between the financial maturity variables and stock market performance*

In this research,  $H_3$  does not represent a single hypothesis, but a series of sub-hypotheses which are developed in Subsection 8.6.2.

#### 8.6.1.1 Correlation Matrix Statistics

Correlation matrix statistics tests were applied in order to explore the correlation between economic reform programme and stock market performance variables. This test's output, as presented in Table 8.22, indicated that, in the relationships between predictors and outcome,



two out of four of the financial maturity variables had a significant positive correlation linear relationship with stock market performance. These predictor variables FM and the outcome variables SMP ranged from Spearman's  $Rho = -0.021$  and  $0.245$  with the correlation of the two FM being significant,  $P < 0.01$ , 2-tailed. The only FMDC found that there is no correlation with the outcome of SMP variables (Spearman's  $Rho = 0.011$ ,  $P > 0.05$ , 2-tailed).

**Table 8.22 Correlation of Descriptive Statistics for Regression Analysis**

Variables	Spearman's Rho (2-tailed) (N=203)			
	SMPV	FMBA	FMDC	FMSMC
SMPV	-	$r = 0.245^{**}$ $p = 0.000$	$r = 0.011$ $p = 0.875$	$r = 0.228^{**}$ $p = 0.001$
FMBA		-	$r = -0.021$ $p = 0.767$	$r = 0.126$ $p = 0.073$
FMDC			-	$r = 0.104$ $p = 0.139$
FMSMC				-

Notice a: \*\* Correlation is significant at the 0.01 level (2-tailed).

Source: Analysis of SPSS output from questionnaire survey data.

The output of Spearman's Rho test in terms of the correlation matrix regression analysis did not reveal any significant correlation coefficient between one predictor that was  $p > 0.9$ . However, the high correlation is between one predictor, the FMSMC and FMBA, which can be accepted at a significance level of  $p < 0.05$  level (Spearman's  $Rho = 0.126$ ,  $p < 0.05$ , 2-tailed).

#### 8.6.1.2 Overall Fit of the Summary Model

The aim of this section is to *present* and *analyse* the overall multiple regression model and, resultingly, explain whether the model is successful in illuminating and presenting what might contribute to the FM variables in better responding and adapting to the influence in SMP variables. Regarding the output of SPSS test, as demonstrated in Table 8.23, the model summary included all three predictors being used, which provides some very significant information about the model fit option.

**Table 8.23 Multiple Regression Model Summary <sup>(b)</sup>**

Model 1	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0.821 <sup>(a)</sup>	0.742	0.733	1.28576	0.742	8.958	3	199	0.000	1.974

Notice a: a Predictors: (Constant), FMBA, FMDC, FMSMC.

Notice b: b Dependent Variable: SMP

Source: Analysis of SPSS output from questionnaire survey data.

As shown in Table 8.23, the value of multiple *R*-value for this model is 0.821, which is an indication that the model provides a reasonably good explanation of the observed values of the

outcome variables of SMP variables. The adjoining column in Table 8.23 provides the value of  $R^2$ , which is a measure of how much variability in the outcome is accounted for by the predictors. This value is 0.742, which means that the three FM variables included as predictors in the model account for 74 per cent of the variation SMP variables. The output of the change in the  $F$ -test resulting from constructing the multiple regression model is demonstrated in Table 8.23. The  $F$ -test is a measure of how much the model has improved the prediction of the outcome compared to the model's level of inaccuracy. In this context, a good model should have a large  $F$ -test (*greater than one at least*). As such, the model causes  $R^2$  to alter from zero to 0.742 and this change in the amount of variance explained gives rise to an  $F$ -test of 8.958, which is significant ( $P < 0.01$ ).

Table 8.24 ANOVA for Multiple Regressions <sup>(b)</sup>

Model	Sum of Square	df	Mean Square	F	Sig.
1 Regression	44.427	3	14.809	8.958	0.000 <sup>(a)</sup>
Residual	328.987	199	0.134		
<b>Total</b>	<b>373.409</b>	<b>202</b>			

Notice a: a Predictors: (Constant), FMBA, FMDC, FMSMC.

Notice b: b Dependent Variable: SMP

Source: Analysis of SPSS output from questionnaire survey data.

If improvement due to fitting the regression model is much greater than the inaccuracy within the model, then the value of  $F$  will be greater than 1. For this model, the  $F$ -test is 8.958, which is significant ( $P < 0.01$ ). These results can be interpreted as meaning that the model significantly improved our ability to predict the outcome variable due to the  $F$ -test being significant at 0.1 levels. Table 8.24 additionally indicates the value of the residual sum of squares  $SS_R$ , which represents the total difference between the model and observed data with the value of 328.987.

### 8.6.1.3 Model Parameters

This section provides the output of the parameters of the multiple regression model, which is presented in Table 8.25.

Table 8.25 Coefficient of the Multiple Regression Model <sup>(a)</sup>

Model	Unstandardised Coefficient		Standardised Coefficients	t	Sig.	95 % Confidence Interval for $\beta$		Correlations			Collinearity Statistics	
1	$\beta$	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance 1/VIF	VIF
(Constant)	0.221	0.704		0.314	0.754	-1.168	1.611					
FMBA	0.389	0.135	0.195	2.892	0.004	0.124	0.655	0.237	0.201	0.192	0.972	1.029
FMDC	-0.035	0.102	-0.023	-0.348	0.728	-0.236	0.165	-0.003	-0.025	-0.023	0.985	1.015
FMSMC	0.447	0.119	0.256	3.772	0.000	0.213	0.681	0.284	0.258	0.251	0.962	1.039

Notice a: a Dependent Variable: SMP.

Source: Analysis of SPSS output from questionnaire survey data.

In the current analysis this general model becomes:

$$\begin{aligned} SMP_i &= \beta_0 + \beta_1 FMBA_i + \beta_2 FMDC_i + \beta_3 FMSMC_i \\ &= 0.221 + (0.389 FMBA_i) + (-0.035 FMDC_i) + (0.447 FMSMC_i) \end{aligned}$$

The  $\beta$  – values inform the relationship between dependent variables SMP and each predictor. If the value is positive, this indicates a positive relationship between predictor and outcome, whereas a negative coefficient represents a negative relationship. Viewing the  $\beta$  – values presented in the first and third column, FMBA and FMSMC have a significant positive relationship with the outcome variable SMP variable ( $\beta = 0.389$  and  $0.447$ ). Differently, FMDC has an insignificant relationship with outcome variable SMP variables ( $\beta = -0.035$ ). In these contexts, the  $\beta$  – values reveal to what degree each predictor affects the outcome if the effects of all other predictors are held constant. The output from t-test is considered, as presented in Table 8.25, in order to test whether a  $\beta$  – value significantly differs from zero. Resultingly, t-test is a measure of whether the predictor offers a significant contribution to the model. Therefore, if the t-test associated with a  $\beta$  – value is significant (e.g. if the value in the column labelled Sign. is less than 0.05), then the predictor is creating a significant contribution to the model. Similarly, the value of Sig. and the larger the value of t-test the greater the contribution of that predictor is. From this model, only one predictor, which is the ratio of stock market capitalisation ( $t = 3.772$ ,  $P < 0.01$ ), emerged as a significant predictor of the FM variable influencing the SMP variables. In addition, the collinearity statistics show (Table 8.25) VIF values ranging from 1.015 to 1.039, all well below 10, and tolerance values ranging from 0.962 to 0.985. None should be below 0.1. The average of the VIF values = 1.027 again indicates that multicollinearity problems may occur in this backward elimination model, so the coefficients of the variables cannot be interpreted through the regression model.

### 8.6.2 Subsidiary Hypotheses

For the relationships between each variable of independent variables of financial maturity and dependent variables in stock market performance, three secondary hypotheses were formulated for testing. Subsections 8.6.2.1, 8.6.2.2 and 8.6.2.3, respectively, test the third model referred to in the research variables specified in Figure 8.2, measured between FM independent variables and SMP dependent variable.

### 8.6.2.1 Banking Assets Ratio

#### Test Hypotheses of Banking Assets Ratio

$H_0$  There is no statistically significant relationship between banking assets and stock market performance

$H_{3.1}$  There is a statistically significant relationship between banking assets and stock market performance

The banking assets ratio is the first dimension of FM variables as presented in Table 8.26, multiple regression model, which is the FMBA independent variables and SMP variables as dependent variables. The review of the hypothesised regression model revealed  $\beta = 0.472$ ,  $b = 0.472$  and  $t\text{-value} = 3.452$  for the completely standardised coefficient of  $FMBA \rightarrow SMP$ . Consequently, the regression path is positively significant at 0.01 level,  $P < 0.01$ . The  $F$ -test for the FMBA is 11.915, which means that this variable is explained through such a model of banking assets ratio variance. Thus, this result supported  $H_{3.1}$ , since the calculated  $t$ -value is greater than critical  $t$ -value = 1.645. Controlling for all other variables, the correlation coefficient between banking assets ratio and stock market performance variables was positively significant (Spearman's Rho = 0.245,  $p = 0.000$ , 2-tailed). Results of the coefficient correlation analysis indicated the direct relationship between FMBA variables and SMP variables, in which it can be concluded that stock market performance increases as the banking assets ratio increases.

**Table 8.26 Coefficient of the Multiple Regression Model <sup>(a)</sup>**

Model	Unstandardised Coefficient		Standardised Coefficients	t	Sig.	95 % Confidence Interval for $\beta$		Collinearity Statistics		Durbin-Watson
	$\beta$	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF	
1										
(Constant)	1.315	0.535		2.460	0.015	0.261	2.370			
FMBA	0.472	0.137	0.472	3.452	0.001	0.202	0.742	1.000	1.000	1.904
$R^2$	0.520									
Adjusted $R^2$	0.513									
F	11.915 $P < 0.01$									

Notice a: a Dependent Variable: SMP.

Source: Analysis of SPSS output from questionnaire survey data.

This finding is also in line with the view of Demirçüç-Kunt and Maksimovic (1998), who proposed, empirically, that banking system development and stock market liquidity are positively correlated with development companies. King and Levine (1993) found significant correlation between the development of the banking system over the 1960-1985 period and the growth rate of per-capita GDP. Beck et al. (1999a) and Levine et al. (2000) reiterated that the indicator of the ratio of total bank assets to GDP gives evidence of the significance of financial

services performed by the banking sector associated with the excess size of economic growth, but this measure does not reveal whether the banking system is in the public or private sector.

### 8.6.2.2 Domestic Credit Ratio

#### Test Hypotheses of Domestic Credit Ratio

$H_0$  There is no statistically significant relationship between domestic credit and stock market performance

$H_{3.2}$  There is a statistically significant relationship between domestic credit and stock market performance

The domestic credit ratio is the second dimension of FM variables as presented in Table 8.27, multiple regression model, which is the FMDC independent variables and SMP variables as dependent variables.

**Table 8.27 Coefficient of the Multiple Regression Model <sup>(a)</sup>**

Model	Unstandardised Coefficient		Standardised Coefficients	t	Sig.	95 % Confidence Interval for $\beta$		Collinearity Statistics		Durbin-Watson
1	$\beta$	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance 1/VIF	VIF	
(Constant)	3.150	0.398		7.907	0.000	2.365	3.936			1.884
<b>FMDC</b>	-0.145	0.107	-0.093	-1.145	0.364	-0.216	0.206	1.000	1.000	
$R^2$	0.281									
<b>Adjusted <math>R^2</math></b>	0.269									
<b>F</b>	1.272 $P > 0.05$									

Notice a: a Dependent Variable: SMP.

Source: Analysis of SPSS output from questionnaire survey data.

Review of the hypothesised regression model revealed  $\beta = -0.145$ ,  $b = -0.093$  and t-value = -1.145 for the completely standardised coefficient of  $FMDC \rightarrow SMP$ . Thus, the regression path is not significant. The results of the correlation coefficient indicated an indirect and insignificant relationship between domestic credit ratio and stock market performance variables, which was small and negligible (Spearman's Rho = 0.011,  $p = 0.875$ , 2-tailed). In fact, this relationship was indirect and the results can support the hypothesis, which stated that stock market performance increases as domestic credit ratio decreases. Thus,  $H_0$  cannot be rejected as the domestic credit ratio affected stock market performance variables. These results are consistent with the respondents' findings, as mentioned early in Chapter Two, in that most Libyan public companies suffer from cash flow shortfalls and used bank overdrafts followed by retained earning and trade credit as financial support to cover their payment. The other possible explanation might be that Libyan commercial banks treat public companies more positively due to the banks' policy of obtaining government involvement for producing

various liberalisation measures, including ownership companies as more reliable collateral and, therefore, are usually more willing to extend overdraft facilities to public companies. In fact, this leads to reduce public spending and gradual withdrawal of government subsidies. This may provide some explanation for the findings of a study by Kulháněk et al. (2003) in the Czech Republic (the country with the largest banking sector measured by ratio of domestic credit to GDP). This indicator presented about 60 *per cent* of GDP compared with 135 *per cent* of GDP in the euro zone. Furthermore, it found that the ratio of loans to GDP, as compared to the domestic credit ratio, was lower in 2001, at about 36.9 *per cent*. Other observers, however, with regard to the domestic credit ratio were investigated by Fry (1982), who discovered a significant negative relationship for a sample of eighty-five developing countries over the period 1970 to 1995, between economic growth rate and both domestic credit ratio and the ratio of deposit. Levine (2004) found that the estimated coefficient of one-standard-deviation increase in banking credit 0.5 would increase growth 0.7 percentage points per annum.

### 8.6.2.3 Stock Market Capitalisation Ratio

#### *Test Hypotheses of Stock Market Capitalisation Ratio*

$H_0$      *There is no statistically significant relationship between stock market capitalisation of GDP and stock market performance*

$H_{3.3}$    *There is a statistically significant relationship between stock market capitalisation of GDP and stock market performance*

The stock market capitalisation ratio is the third dimension of FM variables as presented in Table 8.28, multiple regression model, which is the FMSMC independent variables and SMP variables as dependent variables. A review of the hypothesised regression model revealed  $\beta = 0.497$ ,  $b = 0.118$  and  $t\text{-value} = 4.203$  for the completely standardised coefficient of  $FMSMC \rightarrow SMP$ . Hence, the regression path is positively significant at 0.01 level,  $P < 0.01$ . The  $F$ -test for the FMSMC is 17.667, which means this variable can be explained by such a model of the variance of banking assets ratio. Therefore, this result supported  $H_{3.3}$ , since the calculated  $t$ -value is greater than the critical  $t$ -value = 1.645. Controlling for all other variables, the correlation coefficient between stock market capitalisation ratio and stock market performance variables was positively significant (Spearman's  $Rho = 0.228$ ,  $p = 0.001$ , 2-tailed). Results of the coefficient correlation analysis indicated the direct relationship between FMSMC variable and SMP variables, by which it can be concluded that the suggestion stock

market performance increases as stock market capitalisation ratio increases, cannot be rejected.

**Table 8.28 Coefficient of the Multiple Regression Model <sup>(a)</sup>**

Model	Unstandardised Coefficient		Standardised Coefficients	t	Sig.	95 % Confidence Interval for $\beta$		Collinearity Statistics		Durbin-Watson
1	$\beta$	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance 1/VIF	VIF	
(Constant)	1.422	0.417		3.409	0.001	0.600	2.245			1.981
FMSMC	0.497	0.118	0.284	4.203	0.000	0.264	0.730	1.000	1.000	
$R^2$	0.543									
Adjusted $R^2$	0.536									
$F$	17.667 $P < 0.01$									

Notice a: a Dependent Variable: SMP.

Source: Analysis of *SPSS* output from questionnaire survey data.

The results support the findings of Levine and Zervos (1996, 1998a), who built their framework on Atji and Jovanovic's empirical study using various measures of stock market performance. They argue that a well-developed stock market may offer various kinds of impetus to investment and growth rate from development of the banking system. They found that increased stock market capitalisation may improve an economy's ability to mobilise capital and raise further investment. Similar findings in the literature were observed in Demirgüç-Kunt and Levine (1996), where large stock markets measured by market capitalisation ratios to GDP are more liquid, less volatile and more internationally integrated with stronger information disclosure regulations and international accounting standards. Rousseau and Wachtel (2000) adopted two measures of stock market development: the ratio of market capitalisation to GDP and the ratio of total value to GDP. They recognised both as having a significant positive coefficient.

### 8.6.3 Discussion: Findings from Testing the Financial Maturity Hypotheses

The aim of this section is to *present* the overall multiple regression model and, accordingly, explain the types of financial maturity (independent/predictor variables) and stock market performance (development/outcome variables). The output of the *SPSS* test, as depicted in Table 8.29, reveals very significant information about the model fit under study with those accepted and rejected hypotheses. In this context, the t-test is derived in order to ascertain whether a B value is significantly dissimilar from zero. Consequently, t-tests are considered as measures of whether the predictor is making a significant contribution to the model based on level of significance ( $\alpha$ ). Critical t-values can be expressed based on the type of test used. Therefore, direction relationships are based upon the hypothesis of addressing the effect on predictors as to the extent of compliance with planning standards. For the 0.05 significant

level, the critical t-values are greater than 1.645 for a one-tailed test and 1.96 for a two-tailed test. Indeed, a two-tailed test of significance was utilised for this study.

**Table 8.29 Structural Model Results for Scope of Testing Hypotheses**

<i>Hypotheses</i>		$\chi^2$	<i>df</i>	<i>Relationship with SMP variables</i>		<i>F-test</i>	<i>Sig.</i>	<i>Beta</i>	<i>t-test</i>
				<i>Expected</i>	<i>Comment</i>				
FMBA	H <sub>0</sub>	114.724	13	-	Rejected	11.915	0.001	0.472	3.452
	H <sub>3.1</sub>			+	Accepted				
FMDC	H <sub>0</sub>	140.963	36	-	Accepted	1.272	0.364	-0.093	-1.145
	H <sub>3.2</sub>			+	Rejected				
FMSMC	H <sub>0</sub>	96.552	13	-	Rejected	17.667	0.000	0.284	4.203
	H <sub>3.3</sub>			+	Accepted				

Source: Analysis of SPSS output from questionnaire survey data.

Results from the multiple regression analysis, as displayed in Table 8.29, indicated that models were reflecting a significant relationship between independent and dependent variables in most areas. The conclusion from this analysis is that financial maturity has affected stock market performance. Therefore, the hypothesis which indicates that there is a significant relationship between financial maturity variables and stock market performance variables cannot be rejected. Besides this, results indicated that the domestic credit ratio divided by GDP has an insignificant relationship with independent stock market performance variables.

## 8.7 SUMMARY AND CONCLUSION

This chapter has dealt with the empirical work of regression analysis model of this research, beginning with the dataset, research hypotheses and methodology. Findings related to the research's objectives have been *presented* and *analysed*. The subsequent chapter presents results from the regression *analysis* technique *models* for developing the Libyan stock market, *empirically* examining the research *hypothesis* using data collected by the questionnaire survey that may not be tested by utilising financial statements' data. The *hypotheses* examine the independent variables of economic reform programme, macro-economic reform and financial maturity in terms of dependent variables of stock market performance. The research framework model is presented (Chapter Six, Section 6.6) and tested in Chapter Seven. The measurement regression analysis model was conducted with the *SPSS 2003* software package. Data were screened to check for data input errors, distribution, normality, multicollinearity and outliers, given that findings relating to the significant or non-significant relationship between the independent and dependent variables under study, with the acceptance or rejection of each hypothesis, were discussed and are summarised in Table 8.30.



**Table 8.30 Structural Model Results for Scope of Research Testing Hypotheses**

<i>Hypotheses</i>		$\chi^2$	<i>df</i>	<i>Relationship with SMP variables</i>		<i>F-test</i>	<i>Sig.</i>	<i>Beta</i>	<i>t-test</i>
				<b>Expected</b>	<b>Comment</b>				
ERPD	H <sub>0</sub> H <sub>1,1</sub>	126.537	15	- +	Rejected Accepted	6.263	0.013	0.174	2.503
ERPC	H <sub>0</sub> H <sub>1,2</sub>	110.286	16	- +	Rejected Accepted	5.334	0.022	0.161	2.310
ERPP	H <sub>0</sub> H <sub>1,3</sub>	106.891	18	- +	Rejected Accepted	19.861	0.000	0.301	4.457
ERPL	H <sub>0</sub> H <sub>1,4</sub>	145.103	14	- +	Rejected Accepted	41.283	0.000	0.413	6.425
MERITR	H <sub>0</sub> H <sub>2,1</sub>	173.56	73	- +	Accepted Rejected	2.581	0.110	0.113	1.607
MERER	H <sub>0</sub> H <sub>2,2</sub>	155.172	46	- +	Rejected Accepted	7.898	0.005	0.194	2.810
MERIFR	H <sub>0</sub> H <sub>2,3</sub>	154.281	47	- +	Accepted Rejected	2.693	0.406	-0.014	-0.994
MERBD	H <sub>0</sub> H <sub>2,4</sub>	167.522	47	- +	Accepted Rejected	2.437	0.509	0.047	0.661
MERPCI	H <sub>0</sub> H <sub>2,5</sub>	177.655	48	- +	Rejected Accepted	4.928	0.036	0.068	1.964
MERGDP	H <sub>0</sub> H <sub>2,6</sub>	148.690	46	- +	Rejected Accepted	4.621	0.017	0.076	1.983
FMBA	H <sub>0</sub> H <sub>3,1</sub>	114.724	13	- +	Rejected Accepted	11.915	0.001	0.472	3.452
FMDC	H <sub>0</sub> H <sub>3,2</sub>	140.963	36	- +	Accepted Rejected	1.272	0.364	-0.093	-1.145
FMSMC	H <sub>0</sub> H <sub>3,3</sub>	96.552	13	- +	Rejected Accepted	17.667	0.000	0.284	4.203

Source: Analysis of SPSS output from questionnaire survey data from Tables 8.10, 8.21 and 8.29.

For the first objective the economic reform programme independent variables, in terms of deregulation, corporatisation, privatisation and liberalisation, are described according to one or more descriptive statistics analysis. Analysis findings are explained in terms of exploring potential correlations or variance between economic reform programme and stock market variables. Clearly, results indicated that all economic reform programme independent variables witnessed a dramatic change within stock market dependent variables. Strong evidence from this hypotheses analysis is that the Libyan government succeeded in implementing its economic reform programme and the fact that Libya's stock market performance improved significantly after adopting the economic reform programme cannot be rejected. The second objective, the macro-economic reform independent variables in terms of interest rates, exchange rates, inflation rate, budget deficit, per-capita income and GDP growth rate, are described and analysed. The results from the previous analysis indicated that most of the macro-economic reform variables tend to affect stock market performance variables. Hence, the hypothesis, which stated that there is a significant relationship between macro-economic reform and stock market performance, cannot be rejected. In addition, the results indicated that both interest rates and inflation rates have greatest impact upon stock market performance.

The third objective, the financial maturity independent variables *vis a vis* the banking assets ratio divided by GDP, domestic credit ratio divided by GDP and stock market capitalisation ratio divided by GDP, are described and analysed. For this purpose, the multiple regression model was adopted, although this methodology is normally used to predict the success or failure of research hypothesis. The success of the relationship referred to a significant positive change in financial maturity independent variables and the hypothesised dependent stock market performance variables, whilst failure was defined as a non-significant change in these variables. The results of test hypotheses modelling using t-test and beta coefficient have led to the acceptance of some of the research hypotheses and rejection of others. Findings indicated that financial maturity variables tend to affect stock market performance variables, except for domestic credit ratio divided by GDP, where there was an insignificant relationship. Besides emphasising that development of financial structure in Libya is significant for the process of economic growth rate, this finding suggests that the banking system performs various functions against those performed by stock market performance. On the whole, the findings, relating to the research's three objectives have been *interpreted, explained* and *examined* in this chapter.

In the following chapter the research's final hypothesis will provide an empirical investigation analysis technique, a comparison between the financing patterns of the developed Libyan stock market and other emerging economy markets to empirically test the fourth objective in the final research hypothesis. The econometric growth model will be *undertaken* and *examined* in the next chapter.

## CHAPTER NINE

### AN EMPIRICAL INVESTIGATION OF STOCK MARKET PERFORMANCE IN EMERGING MARKET COUNTRIES

#### 9.1 INTRODUCTION

In Chapter Eight three of the research objectives were examined concerning the economic reform programme, macro-economic reform and financial maturity within the stock market, using a multiple regression analysis model. Chapter Nine investigates and analyses the issue of a practice model in developing countries, as stated in objective four. It identifies similarities and differences across these, giving some insight into the situation of the Libyan stock market and its growth within the context of 42 emerging market nations<sup>45</sup>: Algeria, Argentina, Bahrain, Bangladesh, Brazil, Bulgaria, Chile, China, Czech Republic, Egypt, Fiji, Hungary, India, Indonesia, Iran, Israel, Jordan, Kuwait, Lebanon, Malaysia, Mexico, Morocco, Nigeria, Oman, Pakistan, Philippines, Poland, Qatar, Romania, Russia, Saudi Arabia, South Africa, Sudan, Syria, Thailand, Tunisia, Turkey, United Arab Emirates, Venezuela, Yemen and Zimbabwe (plus Libya). However, in terms of its business environment and economic background, Libya differs from some other emerging countries. The stock market was only established as recently as 2006. In order to achieve the fourth research objective in this investigation, a case study (as indicated in Chapters One and Six) focuses on the Libyan financial market. Comparisons are made with other countries bearing some common features similar to the Libyan context where, in each case, the lessons learned for Libya are discussed.

As already indicated in Chapter Two, according to Libyan stock market law, the key objective behind the establishment of the Libyan stock market is to facilitate and contribute to the rising capital structure and to support its allocation process in order to strengthen Libyan economic growth. Consequently, in order to achieve its objective, it is useful to discover whether best practice from other emerging stock markets is transferable to the Libyan situation and context. To this end, this chapter proposes a basic framework for studying the fundamentals of endogenous growth that is also related to key aspects of financial market functions (see

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<sup>45</sup> Emerging markets, as defined by the World Bank, are those with GDP per-capita of 9,256 US\$ or less in 2002. Their bank also classifies economies as low-income measured by GDP (755 US\$ or less), middle-income (756-9,265 US\$) and high-income (9,266 US\$ or more). Low and middle-income economies are usually referred to as developing countries (World Bank, 2002). The emerging stock market, as defined by the IFC, is one that is in transition, increasing in size, activity, or level of sophistication. Mainly, the emerging stock market was based on the World Bank's classification of a fairly narrow list of economies among developing countries.

Chapter Four). Despite this argument, it is possible to make the following two main contributions. First, a simple model of Romer (1986), Lucas (1988), Rebelo (1991), Barro (1991) and Pagano's (1993) kind of endogenous growth economy can be extended in order to fit in with the effects of the financial market. Clearly, it has highlighted the theoretical literature reviewed in Chapters Four and Five, and the expectations of it, and then considered the empirical work arguing that the degree, to which the stock market influences economic growth depends on how effectively it improves capital accumulation, assists capital mobilisation and increases capital investment output. Second, the model is tested on one case study country, Libya. Accordingly, this study illustrated the first attempt to examine the relationship between stock market performance and economic growth in the experience of developing countries. Its results provide relevant empirical knowledge to help identify potential policy reform recommendations for the Libyan economy and for other developing countries with similar economic structures. Some particular questions are also answered in this chapter. Is the emerging economic model transferable to other cultures and/or between cultures of the Libyan situation and context? If it is transferable, what weaknesses in the structure of the economy may appear in the stock market? If they do, what are the key prerequisites for successful stock market performance in Libya? This may suggest that the stock market in question may have an independent empirical link with national economic growth. In order to examine these issues, can the regression analysis of stock market performance variables be the indicators. Simultaneously, control of economic factors may influence the rate of economic growth in order to measure the sensitivity of analysed results to changes in these variables.

This chapter is divided into nine key sections. The second section gives an overview followed by a discussion of the environment of the Libyan stock market within the context of MENA emerging markets and developed countries. Section 9.3 provides previous empirical findings and theoretical framework. Section 9.4 presents additional observations made by the empirical model and variables measure. Section 9.5 contains a brief discussion of data and methods of analysis adopted in this chapter. Section 9.6 presents additional analytical techniques which demonstrate the results of empirical analysis and are reported in Section 9.7. Determinants of banking and financial market development indicators are presented in Section 9.8. Section 9.9 offers a brief summary and conclusion.

## 9.2 MENA WITHIN THE CONTEXT OF EMERGING MARKETS

As mentioned in previous discussion, strong economic relationships among countries that are in the same region or share the same time zone are expected to reveal higher degrees of similarity in incomes. Thus, it is useful to consider the status and features of emerging markets in the MENA region where most are relatively well in the areas of regulation and supervision as well as in financial openness (Naceur et al., 2008). However, more efforts are needed in order to reinforce the institutional environment and promote non-bank financial sector development (Creane et al., 2004). Specifically, most of these markets have similarities based on the region in which they are located. The analysis, as a quantitative indicator, compares the stock markets in these emerging markets. In MENA countries, for instance, the financial arena is dominated by the banking sector, which represents about 85 *per cent* of capital market structure<sup>46</sup>. The securities markets within the countries are relatively small despite the region containing some of the developing world's largest institutional investors in international markets. Foreign participation, even in the government securities market, is limited in most nations. Similarly, there have been few direct placements of MENA equities in foreign markets. Since the mid-1980s, the financial system has been gradually liberalised by reducing and eliminating interest rate subsidies to priority sectors, using market-based risk management instruments, for example, by countries in the region. This has been extremely narrow in spite of the relatively limited degree of export diversification. Nevertheless, there are considerable variations across countries, significantly in the equity markets, with the result that the supply of corporate securities remains generally limited, both in absolute and relative terms, to the size of the economies. However, due to significant government credit to the capital market for economic development, the reform programme agenda during the 1990s included plans to revitalise stock markets in some countries and establish them in others. This reflects several factors that have constrained the demand for, and supply of, stocks, including the closed family-owned nature of different companies in the region. While, in several countries, public sector enterprises have continued to play a dominant role in a wide range of business and economic activities, the number of effectively quoted companies has been relatively small and markets have remained thin.

In order to explain the status of the MENA stock market among others, it is worth considering a number of indicators of the market: namely, size, activity, efficiency and performance, in comparison with other countries. Table 9.1 provides data indicators of market capitalisation,

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<sup>46</sup> See IMF, Global Financial Stability Report, September 2004.

market capitalisation ratio of GDP, number of listed companies, value traded besides market performance and turnover ratio for three benchmarked years (1995, 2000 and 2006), which have increased in all countries during the last decade. Aggregate market capitalisation of total emerging markets increased from 2.95 *per cent* of GDP ratio in 1995 to 7.61 *per cent* by the end of 2006. In the meantime, the value of trade increased significantly from 9,359.9 million US\$ to 129,245.4 million US\$ in 2005. These overall figures conceal even more individual dramatic stories, regarding both absolute valuation levels and rapid increases in relative valuation. For instance, the markedly high ratios of stock market capitalisation to GDP in 2006 were South Africa (27.79 *per cent*), Jordan (21.08 *per cent*), Zimbabwe (18.81 *per cent*), Malaysia (15.08 *per cent*), Bahrain (13.35 *per cent*) and Kuwait (13.06 *per cent*). Equally revealing are countries with relatively low valuation ratio, including UAE (8.48 *per cent*) Saudi Arabia (9.36 *per cent*), Qatar (11.68 *per cent*) and most other emerging markets. These financial measures may be sensitive to the limited number of transactions on these stock markets since some only open for a few hours daily. Nevertheless, countries that experienced a dramatic increase in market capitalisation relative to GDP between 1995 and 2006 include China (0.58 to 9.17 *per cent*), Jordan (1.89 to 21.08 *per cent*), Israel (3.87 to 12.18 *per cent*), and others. Stock market valuation increases over this period have exceeded any similar growth in corporate profits or national output and, instead, reflect a fundamental reassessment of the value of a nation's common equity. In terms of number of listed companies, India is the leading market with 5937 listed companies, followed by Romania, China and Egypt with 5555, 1086 and 1076 companies, respectively. However, most of these listed companies are not actively trading is mainly due to a relatively new and generally small capital markets when compared with other developing countries, being closed or family-owned enterprises. Table 9.1 further provides two measures of market capitalisation performance and turnover ratio for these countries and regions. While turnover ratio is defined as the total value of shares traded during a year divided by prior year-end market capitalisation, both ratios show market liquidity between 1995 and 2006. Market performance is measured by ratio change in price indexes in US\$, which, in 2006, were Zimbabwe ranked first (943.1 *per cent*) followed by China (138.3 *per cent*) and Venezuela (98.1 *per cent*). The value traded increased in almost all emerging markets between 1995 and 2006 from 9,359.9 to 129,245.4 million US\$ against an increase from 706 to 26392 million US\$ for low-income economies. Several middle-income countries witnessed increases in trading value, including China (49,774 to 1,635,121 million US\$), Egypt (677 to 47,461 million US\$), Iran (741 to 4,886 million US\$) and Jordan (517 to 20,051 million US\$). Although, stock markets in several MENA countries (particularly, the Gulf countries) need to improve liquidity and open their operations to foreign investors.

**Table 9.1 Stock Market Indicators: Market Size, Activity, Efficiency and Performance during 1995-2006**

Country <sup>a</sup>	Market Capitalisation (Millions US\$)			Market Capitalisation Ratio of GDP			Number of listed Companies			Value Traded (Millions US\$)			Market Performance (%) <sup>b</sup>			Turnover Ratio (%) <sup>b</sup>		
	1995	2000	2006	1995	2000	2006	1995	2000	2006	1995	2000	2006	1995	2000	2006	1995	2000	2006
<b>Low-income economies</b>																		
<b>Total</b>	<b>3,674</b>	<b>3,609</b>	<b>27,126</b>	<b>1.25</b>	<b>1.52</b>	<b>6.295</b>	<b>238</b>	<b>249</b>	<b>241</b>	<b>706.0</b>	<b>6857.0</b>	<b>26392.0</b>	<b>-10.00</b>	<b>11.00</b>	<b>196.00</b>	<b>10.00</b>	<b>116.00</b>	<b>65.00</b>
Bangladesh	1,338	1,186	3,610	0.34	0.25	0.56	183	221	269	158	768	943	-2.5	28.5	-8.0	13.3	74.8	28.4
Nigeria	2,033	4,237	32,819	0.55	0.92	2.23	181	195	202	14	263	3,559	-26.9	61.4	39.5	0.8	7.3	13.6
Pakistan	9,286	6,581	45,518	1.25	0.89	3.58	764	762	652	3,210	32,974	126,560	-32.6	-13.7	3.2	29.2	486.8	276.8
Yemen <sup>c</sup>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zimbabwe	2,038	2,432	26,557	2.85	4.01	18.81	64	69	80	150	279	897	10.6	-22.3	943.1	7.6	11.3	6.2
<b>Lower- middle-income economies</b>																		
<b>Total</b>	<b>46,042</b>	<b>86,687</b>	<b>380,852</b>	<b>3.07</b>	<b>2.94</b>	<b>7.55</b>	<b>697</b>	<b>736</b>	<b>662</b>	<b>15,302.8</b>	<b>99,291.3</b>	<b>192,957.2</b>	<b>7.88</b>	<b>-14.33</b>	<b>26.01</b>	<b>24.78</b>	<b>50.69</b>	<b>40.42</b>
Algeria <sup>c</sup>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
China	42,055	580,991	2,426,326	0.58	4.85	9.17	323	1086	1440	49,774	721,538	1,635,121	-14.5	23.0	138.3	115.9	158.3	102.0
Egypt	8,088	28,741	93,477	1.34	2.9	8.71	746	1076	603	677	11,120	47,461	-10.6	-44.3	12.0	10.9	36.1	54.8
India	127,199	148,064	818,879	3.59	3.22	9.33	5398	5937	4796	13,738	509,812	638,484	-35.2	-28.8	36.3	10.10	306.5	93.1
Indonesia	66,585	26,834	138,886	2.98	1.62	3.81	238	290	344	14,403	14,311	48,831	9.9	-59.3	69.9	25.3	31.5	44.3
Iran	6,552	7,350	37,943	0.72	0.76	1.71	169	304	332	741	1,078	4,886	124.3	44.8	-3.2	15.9	17.9	12.7
Jordan	1,270	4,943	29,729	1.89	5.84	21.08	97	163	227	517	416	20,051	10.6	-20.8	-32.7	11.1	7.9	59.5
Morocco	4,376	10,899	49,360	1.19	2.94	7.55	51	53	55	788	432	1,048	5.8	-20.1	8.9	45.9	8.9	53.3
Philippines	58,859	25,957	68,382	7.79	3.42	5.82	205	228	238	14,727	8,196	11,243	-14.6	-34.1	54.0	26.1	16.4	20.7
Sudan <sup>c</sup>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Syria <sup>c</sup>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thailand	141,507	29,489	141,093	8.42	2.4	6.83	416	381	518	57,000	23,258	100,797	-3.6	-55.7	8.0	41.1	52.9	70.7
Tunisia	3,927	2,828	4,446	2.18	1.45	1.44	26	44	48	663	626	522	30.4	9.0	46.6	19.8	22.6	14.3
<b>Upper- middle-income economies</b>																		
<b>Total</b>	<b>72,865</b>	<b>81,119</b>	<b>293,532</b>	<b>5.00</b>	<b>4.00</b>	<b>8.00</b>	<b>194</b>	<b>625</b>	<b>408</b>	<b>18,549.0</b>	<b>33,994.0</b>	<b>103,515.0</b>	<b>-9.00</b>	<b>-16.00</b>	<b>37.00</b>	<b>31.00</b>	<b>33.00</b>	<b>32.00</b>
Argentina	37,783	166,068	79,730	1.46	5.84	3.75	149	127	103	4,594	5,956	4,533	8.6	-25.0	47.9	12.3	4.8	6.4
Brazil	147,636	226,152	711,100	1.92	3.51	6.63	543	459	392	79,186	101,282	254,513	-22.1	-8.4	45.4	47.8	44.6	42.9
Bulgaria	61	617	10,325	0.05	0.49	3.26	26	503	374	4	58	1,509	-15.6	-30.0	65.8	7.7	8.7	19.6
Chile	73,860	60,401	174,556	10.36	8.03	11.97	284	258	244	11,072	6,083	28,753	-2.9	-14.1	29.3	15.3	9.5	18.5
Fiji	67	244	637	0.34	1.45	2.01	4	NA	16	NA	NA	3	NA	NA	NA	NA	NA	0.5
Lebanon	400	1,583	8,279	0.36	0.94	3.64	3	12	11	NA	118	2,035	NA	-18.6	-10.0	NA	6.7	30.8
Libya <sup>c</sup>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Malaysia	222,729	116,935	235,356	24.7	12.47	15.08	529	795	1027	76,822	58,500	66,904	1.8	-22.8	30.5	35.9	44.6	32.1
Mexico	90,694	125,204	348,345	3.17	2.16	4.15	185	179	131	76,822	45,340	80,095	-27.0	-20.4	46.0	33.0	32.5	27.3
Poland	4,564	31,279	149,054	0.33	1.83	4.36	65	225	267	2,770	14,631	55,041	-9.6	-3.4	58.8	NA	48.1	45.3
Romania	201	1,069	32,784	0.06	0.29	2.67	14	5555	2478	2	236	4,260	NA	-25.3	48.9	71.5	24.3	16.0

**Table 9.1 Continued: Stock Market Indicators: Market Size, Activity, Efficiency and Performance during 1995-2006**

Country <sup>a</sup>	Market Capitalisation (Millions US\$)			Market Capitalisation Ratio of GDP			Number of Listed Companies			Value Traded (Millions US\$)			Market Performance (%) <sup>b</sup>			Turnover Ratio (%) <sup>b</sup>		
	1995	2000	2006	1995	2000	2006	1995	2000	2006	1995	2000	2006	1995	2000	2006	1995		
Russia	15,863	38,922	1,057,189	0.51	1.5	10.69	170	249	309	465	20,312	514,362	-30.6	-24.6	70.8	NA	36.6	46.1
South Africa	280,526	204,952	715,025	18.56	15.41	27.79	640	616	401	17,048	77,494	312,439	14.8	-17.3	23.8	6.5	33.2	48.8
Turkey	20,772	69,659	162,399	0.93	2.63	3.07	205	315	314	51,392	179,209	227,615	-13.4	-51.7	-6.2	226.0	196.5	140.5
Venezuela	3,655	8,128	8,251	0.47	0.69	0.45	90	85	53	510	686	666	-31.7	26.5	98.1	9.8	8.8	10.0
<i>High- income economies</i>																		
<b>Total</b>	<b>8,899</b>	<b>21,779</b>	<b>106,336</b>	<b>2.47</b>	<b>3.45</b>	<b>8.59</b>	<b>281</b>	<b>138</b>	<b>136</b>	<b>2881.6</b>	<b>7195.7</b>	<b>194117.3</b>	<b>1.49</b>	<b>-6.93</b>	<b>-4.71</b>	<b>16.77</b>	<b>27.87</b>	<b>74.40</b>
Bahrain	NA	6,624	21,122	NA	8.32	13.35	NA	42	49	NA	247	1,432	NA	-20.7	1.0	NA	3.6	7.4
Czech Republic	15,664	18,077	48,604	NA	1.94	3.4	1,633	131	29	3,630	6,582	32,875	-21.5	-9.7	27.2	24.9	57.7	75.6
Hungary	2,399	12,021	41,935	0.54	2.51	3.71	42	60	41	355	12,150	31,183	-29.4	-28.2	34.2	17.3	85.8	83.7
Israel	36,399	64,081	173,306	3.87	5.3	12.18	654	654	612	9,155	23,349	88,771	10.0	14.6	22.3	25.9	36.6	60.5
Kuwait	25,102	20,772	128,940	9.23	5.51	13.06	52	77	163	6,389	4,210	55,886	39.5	-6.5	-11.2	52.8	21.3	43.2
Oman	1,978	3,463	16,158	1.43	1.74	4.52	80	131	124	211	553	321	8.2	-16.0	14.5	14.4	14.2	21.1
Qatar	NA	5,152	61,563	NA	2.9	11.68	NA	22	36	NA	239	20,565	NA	-8.0	-35.5	NA	4.5	27.6
Saudi Arabia	40,907	67,171	326,869	2.87	3.56	9.36	69	75	86	6,194	17,313	1,403,027	6.6	12.1	-52.6	15.6	27.1	288.4
UAE	NA	5,727	138,531	NA	0.86	8.48	NA	54	81	NA	118	113,005	NA	NA	-42.3	NA	NA	62.1
<b>Total</b>	<b>32,870.0</b>	<b>48,298.4</b>	<b>201,961.6</b>	<b>2.95</b>	<b>2.98</b>	<b>7.61</b>	<b>353</b>	<b>437</b>	<b>362</b>	<b>9,359.9</b>	<b>36,834.5</b>	<b>129,245.4</b>	<b>-2.41</b>	<b>-6.57</b>	<b>63.57</b>	<b>20.64</b>	<b>56.89</b>	<b>52.95</b>

Notice a: The International Finance Corporation (IFC) defines a stock market as *emerging* if it contains at least one of the following two criteria: it is located in a low or middle-income economy defined by the World Bank and its predictable market capitalisation is low relative to its most recent GDP figures. Since 1995, IFC's definition of an emerging market was based mainly on the World Bank's classification of low and middle-income economies. If a country's GDP per-capita did not achieve the World Bank's threshold for a high-income economy the stock market of that country said to be emerging. Therefore, the IFC has adopted new criteria for a market to graduate from index coverage. For a new market to be located in an economy whose GDP per-capita places in the World Bank's low and middle-income classifications in at least one of the last three years. Based on 2005 data, economies with GDP per-capita of (875 US\$ or less), (876-3,465 US\$), (3,466-10,725 US\$), (10,726 US\$ or more) were classified as low, lower middle, upper middle and high-income economies respectively. For more details, see IFC, 2007 and World Bank's website (<http://web.worldbank.org>) data and statistics "country groups".

Notice b: Market performance ratio measured by *Per cent* changes in price indexes in US\$. Turnover ratio measured by value shares traded as *per cent* of capitalisation.

Notice c: NA: Not Applicable.

Source: International Finance Corporation's (IFC's) Emerging Markets' Factbook, now named Standard and Poor's Emerging Market Database, Various Issues.



### 9.3 EMPIRICAL MODEL AND VARIABLE MEASURE

#### 9.3.1 Empirical Model

In respect of the empirical work, this chapter addresses the gap in this field by providing an empirical analysis of the effect of stock market development on economic growth rate in emerging markets in general, and the Libyan economy in particular, by proposing a simple reasonable framework that suggests that stock market development may influence economic growth rate *vis a vis* improving capital accumulation, increasing productivity of capital investment and facilitation of capital mobilisation. Empirically, therefore, a Two-Stage Least-Squares (2SLS) approach is used to correct the endogeneity of independent variables, particularly level of stock market development<sup>47</sup>. While the 2SLS approach allows this work to address the issue of endogeneity of independent variables by using instrumental variables, this method is the key difficulty in finding suitable tools for endogenous variables. Such tools must, in each case, be sufficiently and highly correlated with the explanatory variables and uncorrelated with the error term. However, in this chapter a one-lagged value of endogenous variables as tools in empirical estimations of the 2SLS regressions is adopted.

As discussed in Chapters Three, Four and Five, centred on the modelling of financial markets and an investigation of their economic growth, claims that the effectiveness of financial markets and level of real activity are closely related are, however, not new. Thus, empirical analysis begins by estimating the following basic approach 2SLS for a sample of 42 emerging markets using base-line variables taken from endogenous growth model:

$$Growth = a + b_1R + b_2T + b_3C + \varepsilon \quad (9.1)$$

Where the growth indicator,  $G$ , is per-capita GDP growth rate averaged over the 1995-2006 period,  $a$  is intercept,  $R$  is a vector of variables that are generally measured to explain growth such as: per-capita income; investment; human capital and labour including exogenous variables that determine stock market development,  $T$  is a vector of variables that are under study where assumption could affect growth rate,  $C$  is a vector of selected variables

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<sup>47</sup> 2SLS was widely used during the late 1960s and early 1970s. It was originally provided as a method of estimating parameters of a single structural equation in a system of linear simultaneous equations. It was introduced in early work by Anderson and Rubin (1950), Theil (1953a, 1953b and 1969), Basmann (1957) and Sargan (1958). Farebrother (1999), Anderson (2005), Dhrymes and Muney (2006), Lee (2007), Jallab et al. (2008) and others.

frequently used as controls in estimation (inflation, economic freedom, political stability and the country's openness to trade), and  $\varepsilon$  is the error term<sup>48</sup>.

To shed greater light on how financial development, particularly stock market development, could influence economic growth rate, a simple theoretical framework based on an endogenous growth model framework of the AK as exemplified by Romer (1986), Lucas (1988), Rebelo (1991) and Pagano (1993) should be presented. Suppose the aggregate of output,  $y$ , is produced according to the following constant-to-scale production function:

$$y_t = AK_t \quad (9.2)$$

$$y_{t+1} = AK_{t+1} \quad (9.2a)$$

$$\text{or} \left( A = \frac{y_{t+1}}{K_{t+1}} \right) \quad (9.2b)$$

$$y_{t-1} = AK_{t-1} \quad (9.2c)$$

$$t = 1, 2, 3, \dots, n$$

where  $y$  is a scalar dependent variable,  $K$  and  $t$  are the capital stock and time, respectively, and  $A$  is a variable which measures the social marginal productivity of capital or level of total factor productivity which has two components: economic efficiency and level of technological progress. For the sake of simplicity it is assumed that the population is stationary and that the economy produces a single good, which could be invested or consumed: if it is invested it decreases in value at the rate,  $\delta$ , per period; then gross investment is equal to:

$$I_t = K_{t+1} - (1 - \delta)K_t \quad (9.3)$$

$$K_{t+1} = I_t + (1 - \delta)K_t \quad (9.3a)$$

where  $I$  is the level of investment. In a closed economy with no government policy, capital market equilibrium requires that gross saving  $S$  is equal to gross investment  $I$ :

$$S_t = I_t \quad (9.4)$$

In the process of transforming savings into investment, the stock market and other intermediates absorb resources, so a dollar saved by households produces less than one dollar's worth of investment. Since households invest only a fraction of their savings, capital market equilibrium is:

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<sup>48</sup> For more details see Barro, 1991; Hermes and Lensink, 2001; Omran and Bolbol, 2003; Bolbol et al., 2005.

$$\beta S_t = I_t \quad (9.5)$$

$$\text{or } \beta = \frac{I}{S_t} \quad (9.5 a)$$

The fraction which produced  $(1 - \beta)$  goes to the stock market as commission and fees, and to other financial intermediaries i.e. banks, as the spread between lending and borrowing rates is lost in the process of the stock market and other financial intermediates. The leakages of financial resources may also reflect economic efficiency or what is called X-efficiency of financial markets.

The equation growth rate at time  $t + 1$  can be defined as:

$$G_{t+1} = \frac{\Delta y_t}{y_t} = \frac{y_{t+1}}{y_t} - 1 \quad (9.6)$$

$$G_{t+1} = \frac{y_{t+1}}{y_t} - 1 \quad (9.6 a)$$

Since  $y_t = AK_{t+1}$ , substituting this into (9.6 a) yields:

$$G_{t+1} = \frac{AK_{t+1}}{y_t} - 1 \quad (9.6 b)$$

Substituting the value of  $AK_{t+1}$  from (9.3 a) into (9.6 b) yields:

$$G_{t+1} = \frac{A[I_t + (1 - \delta)K_t]}{y_t} - 1$$

plummeting all subscripts for a steady state of growth rate:

$$\begin{aligned} G &= \frac{AI}{y} + A \left[ \frac{(1 - \delta)K}{y} \right] - 1 \\ G &= \frac{AI}{y} + A \left[ \frac{K}{y} - \frac{\delta K}{y} \right] - 1 \end{aligned} \quad (9.7 c)$$

Substituting the value of  $K/y$  from (9.7 c) yields a steady state growth rate:

$$\begin{aligned} G &= \frac{AI}{y} + A \frac{I}{A} - A \delta \frac{I}{A} - 1 \\ &= \frac{AI}{y} - \delta \end{aligned} \quad (9.8)$$

Substituting the value of 'I' from (9.5) into (9.8) yields:

$$G = A\beta \frac{S}{y} - \delta \quad (9.9)$$

The equation can be rewritten (9.9) as follows:

$$G = A(\beta s) - \delta \quad (9.10)$$

Where  $s = S/y$

The equation (9.10) suggests that at steady states, the real economic growth rate is some composite of the social marginal productivity of capital, the proportion of total savings that are mobilised to investment and the savings ratio. In identity form, a re-interpretation of the equation (9.10) can be written as follows:

$$G = \ln A + \ln \beta + \ln s \quad (9.11)$$

The key point is that the equation (9.11) represents a composite of the three main mechanisms by financial development which may induce endogenous economic growth:

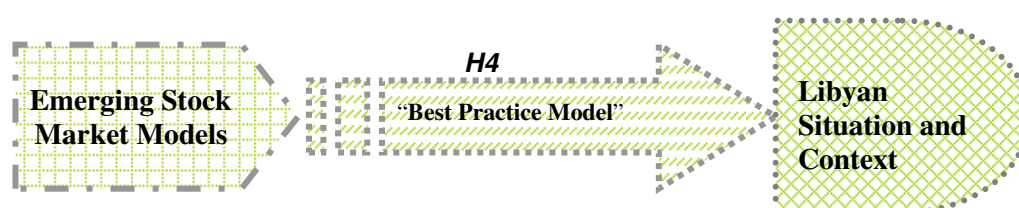
1. It can raise  $\beta$  the proportion of savings channels to investment (i.e. mobilisation and allocation of capital to its efficient use)
2. It can contribute to raising  $s$ , the savings rate and, thus, physical capital accumulation
3. It can increase  $A$ , the level of total factor productivity by influencing economic efficiency or the level of technological progress.

As financial markets and institutions play a key role in mobilising and allocating resources to their efficient use, Stulz (2000: 11) states: *“even though a country has savings, its growth can be stunted because its financial system fails to direct these savings where they can be invested most efficiently”*. Khasnobis and Bhaduri (2000: 2) commented *“a fundamental job of the economy is to allocate capital efficiently. To achieve this, capital is supposed to have high returns and be withdrawn from sectors with poor prospect [...] formal financial markets and associated institutions improve the capital allocation process and thus contribute to economic growth. Financial system collective the small savings of numerous investors for use by agents with entrepreneurial and managerial talents who need funds for large-scale capital investment”*.

However, financial markets and institutions that are not sufficiently developed may either fall short of receiving all potential savings from households or divert many savings away from investment. With underdeveloped financial markets, individuals may allocate some of their savings to passive tools, such as gold, which cannot be used directly for physical investment. With the development of efficient financial markets and institutions, more savings would be channelled to the financial sector and this would increase the amount of funding directed to the most productive investments and, therefore, lead to economic growth. Nevertheless, financial institutions also provide an information production function. Instead of informed traders producing information *vis a vis* trading and conveying it via prices, banks hire loan officers who produce information for evaluating projects for loan financing. However, most information collected by banks remains as private assets. In the sense of influencing the whole economy, stock markets are certainly more significant than banks. They can, thus, play a unique role in furthering productivity and long-term economic growth.

In summary, the growth rate in output ( $G$ ) in an economic activity, which is an aggregate measure of performance, is partly determined by effectiveness and efficiency of financial markets and institutions in performing liquidity, sharing information and monitoring functions. Investigation is aimed at analysing and, where possible, explaining variations in the financing model between emerging market economies and the Libyan stock market to display diverse financing behaviour from that of other emerging market economies. This totalled 42 emerging developing market countries: Algeria, Argentina, Bahrain, Bangladesh, Brazil, Bulgaria, Chile, China, Czech Republic, Egypt, Fiji, Hungary, India, Indonesia, Iran, Israel, Jordan, Kuwait, Lebanon, Malaysia, Mexico, Morocco, Nigeria, Oman, Pakistan, Philippines, Poland, Qatar, Romania, Russia, Saudi Arabia, South Africa, Sudan, Syria, Thailand, Tunisia, Turkey, United Arab Emirates, Venezuela, Yemen and Zimbabwe (plus Libya). These nations were selected to examine the financing model in place among these emerging developing nations (see Figure 9.1).

**Figure 9.1 Theoretical Model from other Emerging Markets**



Source: Developed for this research from Chapter Six, Subsection 6.6.3: Background Statistical Technical Model Cross-country Comparison.

The hypothesis tested in this chapter is based on the premise that institutional features of the Libyan business environment may induce the national stock market to display disparate financing behaviour. Therefore, the null hypotheses were formulated.

*H4 There is no significant difference in financing behaviour between the Libyan stock market and other emerging market economies*

In order to investigate empirically and analyse the strength of the correlation between stock market development and the growth rate of economic activity in developing countries (including Libya), this model can first be used to determine the version of empirical model that can be used to examine this relationship in order to achieve an extension of the endogenous growth model mentioned in previous discussions incorporating stock market development effects. As shown in equation 9.10, the expression for growth is combined with three equations that capture the effect of financial market development on growth: the social marginal productivity of capital ( $A$ ), or what is termed the level of total factor productivity, savings rate ( $S$ ) and production of savings channelled to investment ( $\beta$ ). Based on the theoretical framework proffered previously, to consider the behavioural nature of these equations it can be assumed that the behaviour of ' $s$ ' and ' $\beta$ ' is influenced by some measurements of stock market development as follows:

$$\ln s_t = \varphi_0 + \varphi_1 STOCK_t + \eta_t \quad (9.12)$$

$$\ln \beta_t = \delta_0 + \delta_1 STOCK_t + \mu_t \quad (9.13)$$

where  $STOCK_t$  is the vector of stock market development measurement,  $\eta_t$  and  $\mu_t$  are the white-noise error terms, and  $t$  represents the time period. Second, the behaviour of  $A_t$  is influenced by stock market development and, following Romer (1986) and Locas (1988) it is influenced by capital-output ratio and human capital accumulation. Hence:

$$\ln A = \rho_0 + \rho_1 STOCK_t + \rho_2 (K_t / Y_t) + \rho_3 (L_t + H_t) + v_t \quad (9.14)$$

where  $K/Y$  is capital-output ratio,  $L_t$  is an indicator of labour,  $H_t$  is an indicator of human capital and  $v_t$  is white-noise error term, population growth ( $pop$ ) is measured and substituted for growth in labour. Population is included as an instrument (determinant of the development a stock market but not economic growth). In review of population growth, human capital including the investment ratio as elements in the vector  $R$  usually determines growth.

Substituting equations 9.12, 9.13 and 9.14 with 9.11, the following empirical model can be obtained:

$$G_t = a + b_{11}pop + b_{12}H_t + b_{13}(K_t/Y_t) + b_2STOCK_t + b_3C + \varepsilon_t \quad (9.15)$$

where  $\varepsilon_t$  is white-noise error term ( $\varepsilon_t \approx iidN(0, \sigma_\varepsilon^2)$ ). The argument in this basic empirical model is that savings and investment activities in financial markets, e.g. stock markets, induce economic growth endogenously. Consequently, with the growing framework, it can be utilised for the growth rate of per-capita real GDP as a measure of real economic growth. That would generate the growth rate of real per-capita GDP as the first variable in the logarithm of the real per-capita GDP series. Investment is included as a measure of development since it indicates that a country has risen beyond subsistence consumption. Ultimately, with most empirical studies in economic growth, secondary school enrolment rates would be required as a proxy for the stock of human capital  $H_t$ <sup>49</sup>. The other tool is a measure of the country's trade openness specifically (ratio of imports and exports to GDP) where the country that is engaged in a large amount of international trade may have more information about the key framework required for a stock market and, more significantly, to help structure the background of the stock market than a closed economy<sup>50</sup>.

Data analyses were not available for a uniform period for each stock market in emerging markets country, as many countries have established their stock markets recently including Libya, thus rendering it quite onerous to estimate a long-term growth equation such as 9.15 and, although no existing methods are reliable for estimating, making simplified assumptions to transfer equation 9.15 into a form could be estimated<sup>51</sup>. However recent studies, for instance, Ghura (1997), Beddies (1999) and Bolbol et al. (2005), can be used as the investment output ratio ( $I/y$ ), rather than using capital output ratio ( $K/Y$ ). Thus, the basic statistical

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<sup>49</sup> Human capital is empirically proxied by numerous variables including primary and secondary school enrolment rates, total estimated average schooling years and HDI. This was widely used by many studies e.g. Barro, 1991; Mankiw et al., 1992; Levine et al., 2000 and others. Thus, none can perfectly represent human capital, secondary school enrolment rate as mentioned hitherto.

<sup>50</sup> For more details see, e.g. Minier (2001) for recent discussion of the relationship between trade openness and opening a stock exchange.

<sup>51</sup> One of the most significant difficulties in measuring and/ or estimating accumulation data is in determining initial capital stock  $k_0$ . Most imperial researchers base their measurement or estimate on an assumption of initial capital stock of zero (more details see i.e. King and Levine, 1993a; Levine and Zervos, 1996). Others suggest deriving a guess at initial capital stock in 1950, which assumes that a country was then at its steady-state capital-output ratio (see i.e. Harberger, 1998; Levine and Zervos, 1998a; Beck et al., 1999 and Levine et al., 2000. Most of these assumptions did not offer the true picture of capital stock market accumulation.

model adopted to test the impact of stock market development on the countries' economic growth rate is specified in the following equation:

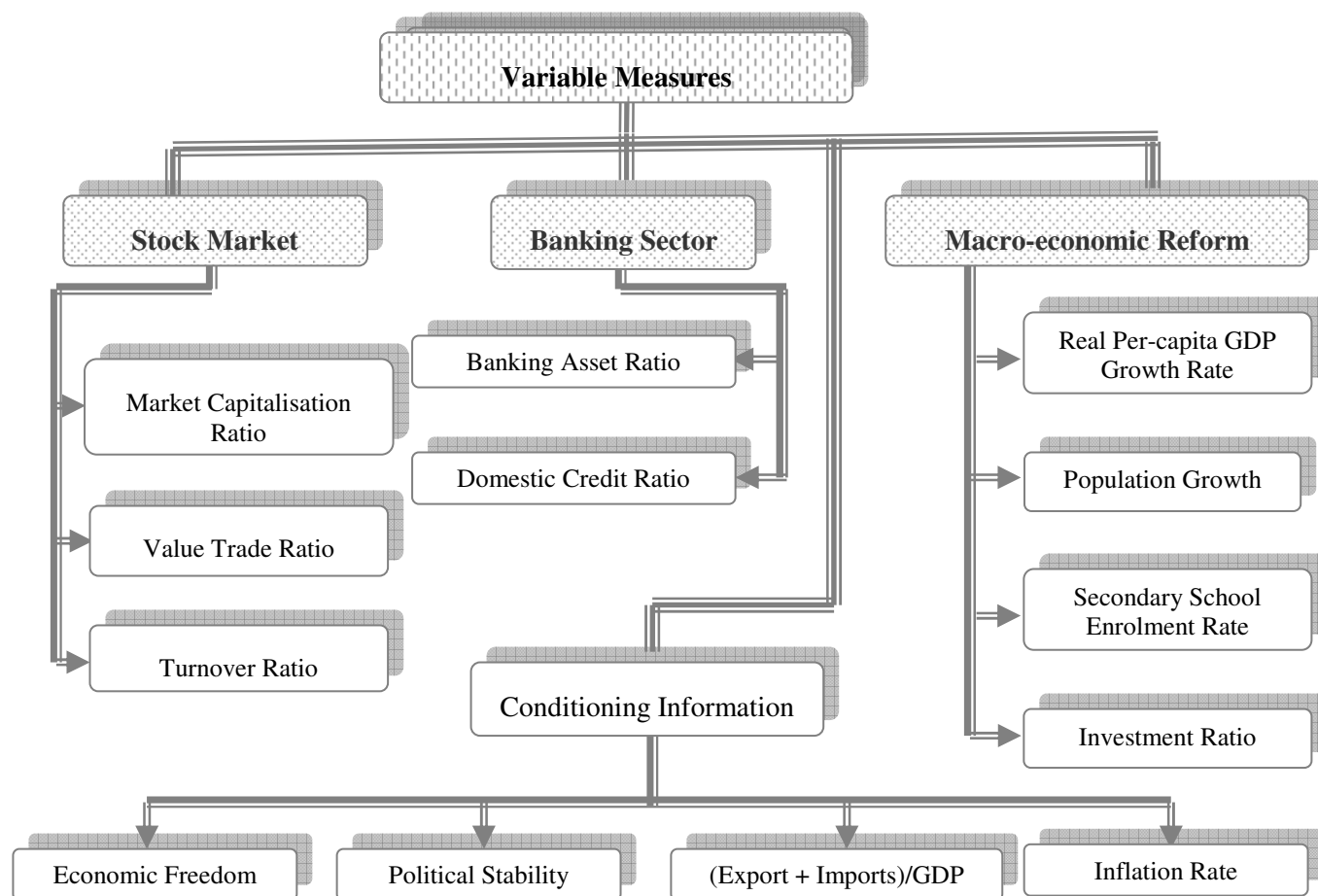
$$G_t = a + b_{11}pop + b_{12}H_t + b_{13}(I_t / Y_t) + b_2 STOCK_t + b_3 C + \varepsilon_t \quad (9.16)$$

As previously mentioned in Chapter Five, an intensive argument in the literature focuses on the relative virtues of stock markets as opposed to those of the bank. Banks and stock markets, however, may act as complements in providing financial services and promoting economic growth. Therefore, in addition to this chapter's key target, the significant issue of whether the stock market and the banking sector substitute for each other or/are complementary in providing financial services and promoting economic growth in emerging countries, including Libya, is examined. Whether the stock market or the banking sector is better at facilitating economic growth, or if it is the overall level of financial development that is critical for economic growth, is also regarded. In order to examine these issues in this empirical model, accounting is required for the effect of banking sector development. Additionally, another variable ( $BANK_t$ ) that measures banking sector development is added to the basic empirical model as in equation 9.16. If the coefficient estimate of the stock market development indicator ( $STOCK_t$ ) is still significant and relatively stable after including the banking sector development indicator ( $BANK_t$ ), this may imply that the stock market and banking sector are complementary rather than substitutes in providing financial services to the emerging market in general, and the Libyan economy in particular. The scales of the coefficient estimate of stock market and banking sector development indicators provide a measure with an indicator about the significance of stock market development in comparison with banking sector development in enhancing the economy's growth rate.

### 9.3.2 Variable Measure

This study follows standard practice in the literature findings, both theoretically and empirically, in measuring financial development by aggregate variables that reflect bank-and-market structures. Appendix M, Table M.1 presents a summary of the main previous empirical evidence on finance and economic growth. In this research, as shown in Figure 9.2, these four characteristics were investigated, along with stock market development variables, banking sector development variables, macro-economic reform variables and conditioning information set variables. The following subsections provide a detailed description of said variables.



**Figure 9.2 Forms of Variable Measures**

Source: Developed for this research from Subsection 9.3.2: Variable Measures.

### 9.3.2.1 The Stock Market Development Variables

These variables are of particular analytical interest for domestic and international dimensions of stock market development. As mentioned earlier, in Chapter Five, Section 5.6, well-functioning stock markets can play a significant role in economic development processes by performing the following functions: aggregate and mobilise capital; provide risk-pooling and sharing of services; enhance liquidity; monitor managers; exert corporate control. It is difficult, however, to construct precise measures of these functions. In this study indicators are used to suit the purpose of concept of stock market development by constructing proxies for stock market development that are most commonly used as statistics by numerous academics and practitioners (see e.g. Wurgler, 2000). These indicators are associated with size, activity and efficiency of stock market development or market-based system.

- To measure stock market size. *Market capitalisation is used as a share of GDP* ratio, which equals the value of domestic equities (that are traded on domestic market) to GDP. It is assumed that the size of the stock market is positively correlated with the ability to mobilise capital and to diversify risk. However, the size of the stock market does not provide any indication of its liquidity (Naceur et al., 2008).
- To measure stock market activity or liquidity. Value traded is used which is measured by the ratio of *total value traded to GDP* and is related to value of stock market transactions relative to the size of economy. Liquid stock markets are a significant attribute of stock market development because, theoretically, more liquid stock markets improve the share of capital to their best use, influence investment in the long-term and facilitate technological innovation, therefore, enhancing long-term growth rate (see Levine, 1991; Miller, 1991; Bencivenga et al., 1996; Henry, 2000). Liquidity is expected to have a positive impact on stock market capitalisation because the large amount of savings is channelled *vis à vis* stock market.
- To measure stock market efficiency. *Turnover ratio*, which equals the value of trades of shares on national stock markets divided by market capitalisation. More efficient stock markets can faster better resource allocation and spur growth (Bencivenga et al., 1995).

### 9.3.2.2 The Banking Sector Development Variables

In this study two indicators of banking sector development or bank-based system are utilised. These have been adopted by Beck et al. (1999a) and Levine et al. (2000) as the ratio of total bank assets to GDP and the value of credit given by the banking sector to the private sector divided by GDP<sup>52</sup>.

- Banking assets. The ratio of *total bank assets to GDP* provides a measure of overall size of the banking sector. Boyd and Smith (1996) suggest that banks and stock markets may behave as complements rather than as substitutes. Empirical findings by Demirgüç-Kunt and Levine (1996) demonstrate that the degree of stock market development is positively related to bank development. Alternatively, Garcia (1989) finds that central banks may create a negative correlation between bank growth and stock market development.

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<sup>52</sup> For Libya, Omran and Bolbol (2003) use both ratio of banking assets and private sector.

- Credit to private sector. Value of credit given by the banking sector to the private sector divided by GDP provides a measure for financial intermediary development following Levine and Zervos (1998), Rousseau and Wachtel (2000), and Beck and Levine (2004). While the first measure does not indicate whether claims of banks are in the public or private sector, the second indicators concentrate on claims to the private sector. Levine (1997: 705) stated “*financial systems that allocate more credit to private firms are more engaged in researching firms, exerting corporate control, providing risk management services, mobilising savings, and facilitating transactions than financial systems that simply funnel credit to government or state owned enterprises*”.

### 9.3.2.3 Macro-economic Reform Variables

Past and recent empirical findings on growth have identified a large number of variables correlated with growth; therefore, other regressions are included to evaluate the strength of practical correlation between real per-capita GDP growth and each stock market and banking sector development indicator to changes in the conditional information set. Specifically, two variables most generally adopted in growth empirical models are included.

- Income. Real per-capita GDP growth in US\$ is used to measure income level. As income increases, the cyclical component should have a positive influence on the size of stock market development, whereas a higher level of real GDP per-capita means better education, better business environment and wealthier citizens. Accordingly, a positive impact on stock market development is expected.
- Population growth rate. This ratio is the fractional rate at which the number of individuals in a population increases<sup>53</sup>. While this measure ordinarily refers to change in population over a unit time period, it is often expressed as a percentage of the number of individuals in the population at that period's outset.
- Secondary school enrolment<sup>54</sup>. This ratio is a measure of the size of the level of educational system in the country's various regions and of the demand for teachers, buildings and educational resources.

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<sup>53</sup> The rate of national growth is expressed as a percentage for each country, commonly between about 0.1 *per cent* and 3 *per cent* (Rosenberg, 2009).

<sup>54</sup> Enrolment ratios are calculated as the number of students enrolled at a certain level of education as a percentage of the population of the age group that officially corresponds to that level. Enrolment ratios can be higher than 100 *per cent* because some students are younger or older than the corresponding age group.

- Investment ratio. This ratio, which is an important policy instrument, is a measure between the gross fixed capital and gross disposable income. Investment ratio depends on saving.

### 9.3.2.4 *The Conditioning Information Set Variables*

In order to examine the sensitivity of results provided, various conditional information sets can be experimented with, as suggested by recent empirical findings on growth<sup>55</sup>. The aforementioned finding on growth rate has identified many variables partially linked with growth. Despite being both technical and time variables, *the degree of freedom* restrictions compel the limit of conditional variables to those most generally used in the previous literature. This includes inflation rate (based on consumer price index), economic freedom measured by business freedom, trade freedom, fiscal freedom, government size, monetary freedom, investment freedom, financial freedom, property rights, freedom from corruption and labour freedom, political stability and the country's opening trade (imports and exports) as a share of GDP<sup>56</sup> to capture the degree of the economy openness.

## 9.4 DATA AND SUMMARY STATISTICAL ANALYSIS

### 9.4.1 The Sample

Data were extracted from various sources. The original intention was to cover all countries in the emerging market region but, given that some established a stock market only in the past few years (Algeria, Libya, Sudan, Syria and Yemen), the sample lists 42 countries, 16 of which are Arab nations. As data were not available for a uniform period for other Arab nations (i.e. Iraq, Mauritania and Palestine) they were excluded from the sample where some countries had no data available on stock market units until recently. Criteria used for selecting emerging market countries, including Libya, were availability and quality of a reasonably large sample of variable measures over a timescale of 12 years from 1995 to 2006. In this study, emerging countries were chosen to be empirically investigated, not only because very few studies have been devoted to the emerging market, but also because size and financial systems' structure differ sensibly between these countries. Most emerging market nations have embarked on far-reaching financial reforms since the mid-1980s. Besides, the key findings stemming from emerging market economies could be of interest to other developing countries at the same

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<sup>55</sup> See for instance, Barro (1991), Mankiw et al. (1992), Levine and Renelt (1992), Barro and Sala-I-Martin (1995), Beck et al. (1999), Bolbol et al. (2005) and others.

<sup>56</sup> As mentioned by Edwards (1993), the literature on endogenous growth argue that economies that are more open to international trade can grow more rapidly by expanding their markets and becoming more efficient.

stages of financial development; for instance, African, Asian, Eastern European and Latin American countries that are extensively reforming and liberalising their financial systems.

On domestic stock market development indicators, the US\$ amounts of market capitalisation, value traded and turnover ratio on the major database were obtained from the International Finance Corporation's (IFC's) Emerging Markets Factbook (also now named Standard and Poor's Emerging Market Database). The dataset on these stock market measures covers the period 1995-2006 for 37 countries. Data on macro-economic variables per-capita GDP growth, gross domestic product (GDP), consumer price index (CPI) and population growth are retrieved from the International Monetary Fund (IMF), the World Bank Outlook Database and ERS International Macroeconomic Data Set including investment, exports and imports which are retrieved from the World Economic Factbook published by the Central Intelligence Agency, respectively. Banking sector variables, total banking sector assets and total bank claims on the private sector are from annual reports of the Central Banks. Data on secondary school enrolment rates are obtained from the UNESCO Institute for Statistics. Datasets of economic freedom come from the Index of Economic Freedom 2008 and the political stability database from the working paper "Government Matters VII and the Aggregate and Individual Governance Indicators 1996-2007" by Kaufmann et al. (2008). All data are measured in nominal US\$ currency and averaged over the 12 years to smooth growth and explanatory variables.

#### **9.4.2 Summary Statistical Analysis**

Table 9.2 provides a summary of statistics for the entire previous variables over the sample period used for estimation during 1995-2006. It can be noted that, prior to estimating the relationship between the economic growth rate and its determinants, it is significant to consider whether or not those data are stationary. This study used testing for stationary to ensure that the variables used in the regressions are not subject to spurious correlation, although the problem of spurious correlations could also emerge when variables are deflated by a stochastic series such as GDP growth. For instance, Phillips (1986) argued that regressions involving non-stationary variables may lead to spurious results demonstrating apparently significant relationships even if variables are generated independently. Additionally, the Phillips-Perron test, which was introduced by Phillips-Perron (1988), was used to determine the order of integration of the variables of interest. The Phillips-Perron test statistics (PP) are modifications of the Augmented Dickey-Fuller t-statistics (ADF) which take

into account the less restrictive nature of the error process<sup>57</sup>. The last two columns, as shown in Table 9.2, show the outcome of unit root test for all the variables adopted. The PP test failed to reject the unit root hypothesis at the 5 *per cent* level for all variables tested. These findings are generally consistent with the hypothesis that all the variables are individually integrated of order one I (1). Therefore, the test rejects the null hypothesis of a unit root for each series in first differences. However, before estimating the regressions the variables need to be transformed by taking the first differences operator to achieve stationary<sup>58</sup>. The *mean* for entering the variables is reported in Table 9.2. Only five variables had the highest mean, such as bank assets ratio (*mean* 71.27), ratio of the sum of export and import (*mean* 62.27), market capitalisation ratio (*mean* 56.88), economic freedom (*mean* 56.68) and domestic credit ratio (*mean* 52.93).

**Table 9.2 Descriptive Statistics: Forty Two Emerging Markets (Annual Average 1995-2006)**

Variables	Code	Mean	Median	SD	Skewness	Kurtosis	PP in Level	PP in 1 <sup>st</sup> Difference
Real Per-capita GDP Growth Rate	PCYG	2.43	2.67	2.22	-0.59	2.70	-2.723	-5.613
Population Growth	POP	1.51	1.49	1.06	-0.08	0.13	-2.645	-4.558
Secondary School Enrolment Rate	EDUC	44.09	39.89	24.31	0.50	-0.67	-2.745	-5.594
Investment Ratio	INVES	17.60	18.52	7.61	-0.85	0.19	-1.605	-5.401
Market Capitalisation Ratio	MC/GDP	56.88	36.75	80.35	3.24	6.26	-1.671	-3.729
Value Trade Ratio	VT/GDP	28.18	19.14	22.13	0.79	-0.41	-2.745	-5.231
Turnover Ratio	TURNOVER	36.04	25.89	38.22	2.06	4.81	-2.383	-5.072
Bank Asset Ratio	BAR	71.27	72.00	13.15	-0.38	-0.76	-0.893	-6.436
Domestic Credit Ratio	DC/GDP	52.93	49.57	22.22	0.26	-0.66	-2.625	-3.668
Economic Freedom	EF	56.68	57.80	9.44	-0.47	-0.11	-2.010	-5.897
Political Stability	PS	-0.42	-0.36	0.82	0.01	-0.64	-2.511	-5.379
Export + Import/GDP	OPEN	62.27	61.22	16.82	-1.09	2.63	-2.317	-5.572
Inflation Rate	INF	12.30	5.48	17.02	2.43	6.06	-2.543	-4.283

Notice a: Critical value of PP test is 1 % equal -3.830, 5 % equal -3.029 and 10 % equal -2.655.

Market capitalisation ratio is market capitalisation divided by GDP. Value traded ratio is total value of equity transactions divided by GDP. Turnover ratio is total of equity transactions divided by market capitalisation. Bank asset ratio is total assets of banking sector divided by GDP. Domestic credit ratio is ratio of bank claims on private sector GDP.

Source: Developed for this research from Section 9.4 Data and Summary Statistical Analysis.

<sup>57</sup> Phillips and Perron (1988) proposed a non-parametric method of controlling for higher-order serial correlation in series. In theory, the PP test is known to be superior, Stock (1994) has shown that the ADF test performs better in practice. Cheung and Lai (1994, 1998 and 2004) and Martinz (1999) have shown that the PP test achieve more favourable evidence than the ADF test. Consequently, in this research only use Phillips and Perron test.

<sup>58</sup> Another advantage of running the regressions using first differences of the data is to reduce any influence of multicollinearity, which can be improving the robustness of the estimation results.

Table 9.2 additionally displays the entire variables, except for inflation rates, which have no significant values of *kurtosis* and positive/negative *skewness*. This indicates that these variables do not have significant departure from a normal distribution<sup>59</sup>. Inflation rates show significantly high values of *kurtosis* (6.06), indicating that, for the given level of standard deviations, observations for this variable cluster around a central point with a small number of large outliers. Brunner and Hess (1993) argue that the inflation rate was stationary before the 1980s, but it became nonstationary afterward. Table 9.3 presents the correlation matrix among the variables. The first number is the correlation and the second is the *P*-value (a value of less than 0.01 and 0.05 indicates that the correlation is significant at *one-per cent* and *five-per cent* levels respectively). Findings from Table 9.3 illustrate that the two stock market development indicators are statistically significant correlated with growth rate (per-capita income real GDP growth rate). Stock market liquidity measures that value traded and turnover ratios are positively and significantly correlated with growth *at the 0.01 level*. Correlation between market capitalisation and GDP per-capita is almost 0.18 and is significant *at the 0.05 level*. In terms of individual countries, rankings can depend significantly, particularly in some countries that are presented as well-developed, in all measures, such as Israel, Jordan, Kuwait, Malaysia and South Africa, as displayed in Table 9.1. Some countries are large and illiquid, such as Bahrain, Chile and Zimbabwe. Other countries have small but active stock markets: China, Pakistan, Saudi Arabia and Turkey.

The correlation between stock market development indicators demonstrates three key points. First, the two measures, namely value traded and turnover ratios, may be substitutes and reveal similar aspects of stock market development. Second, the stock market, since the indicator is measured by the markets' capitalisation ratio, is significantly and positively correlated with liquidity indicators of turnover ratio. This leads to major points that, when the size of stock market increases, it becomes more liquid and efficient. These findings confirm those of Demirgüç-Kunt and Levine (1996) that large stock markets measured by equity capitalisation to GDP are more liquid and less volatile. Finally, liquidity and market capitalisation are significantly correlated where the correlation coefficient among these variables is below the 0.05 level on average. This suggests that the various indicators capture different aspects of stock market development. For instance, market capitalisation may capture the ability of the stock market to mobilise capital and hedge risk, while market liquidity may reveal information on firms and improve corporate governance (Holmstrom and Tirole, 1993), thereby facilitating growth. On the other hand, the role of information in this process has been questioned by

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<sup>59</sup> Values of *skewness* and *kurtosis* are 0 and 3 respectively, if observed distribution is normal.

Stiglitz (1985) who argues that developed stock markets quickly reveal information through price changes, creating a free rider problem and reducing investor incentives to spend resources to conduct costly search. Table 9.3 further shows that the ratio of domestic banks on the private sector to GDP is positively and statistically correlated with growth rate at the 0.01 level. Empirically, Levine et al. (2000) found that the private credit to GDP is statistically significantly correlated with economic growth rate at the *five-per cent level* in the simple, policy and full conditioning information set regressions. They suggested that the exogenous component of financial intermediary development is closely tied to long-term rates of per-capita GDP growth. Additionally, there are strong correlations between both the bank sector and stock market development indicators. This means that a possible explanation for this correlation is that the stock market transmits information useful to creditors. This revelation of information may make lending to a publicly quoted company less risky. Consequently, greater development in the stock market may increase the ability of companies to obtain credit and encourage banks to provide more credit. These findings confirm the results of Demirgüç-Kunt and Levine (1996), Levine and Zervos (1996, 1998b) and Garcia and Liu (1999) that banking sector and stock market development are complements rather than substitutes.



**Table 9.3 Correlation Matrix among Variables**

	PCYG	POP	EDUC	INVES	MC/GDP	VT/GDP	TURNOVER	BAR	DC/GDP	EF	PS	OPEN	INF
PCYG	1.000	-0.330** 0.000	0.092* 0.039	0.105* 0.018	0.180* 0.017	0.154** 0.001	0.216** 0.000	0.175** 0.000	0.179** 0.000	-0.037 0.410	0.165** 0.000	0.100* 0.024	0.037 0.407
POP		1.000	-0.285** 0.000	-0.375** 0.000	0.015 0.736	-0.120** 0.009	-0.228** 0.000	-0.175** 0.000	-0.105* 0.020	0.030 0.505	-0.244** 0.000	0.062 0.169	-0.232** 0.000
EDUC			1.000	0.027 0.541	-0.079 0.076	0.054 0.222	0.095* 0.035	-0.128** 0.004	-0.004 0.936	-0.215** 0.000	-0.127* 0.006	-0.172** 0.000	0.180** 0.000
INVES				1.000	0.129** 0.004	0.134** 0.003	0.086 0.055	0.387** 0.000	-0.023 0.604	0.107* 0.018	0.058 0.210	-0.024 0.594	0.060 0.185
MC/GDP					1.000	0.757** 0.000	0.323** 0.000	0.346** 0.000	0.051 0.258	0.514** 0.000	0.190** 0.000	-0.006 0.899	-0.247** 0.000
VT/GDP						1.000	0.745** 0.000	0.435** 0.000	0.221** 0.000	0.416** 0.000	0.151** 0.001	-0.110* 0.014	-0.116* 0.011
TURNOVER							1.000	0.389** 0.000	0.345** 0.000	0.235** 0.000	0.110* 0.019	-0.146* 0.001	-0.019 0.676
BAR								1.000	0.320** 0.000	0.425** 0.000	0.291** 0.000	0.120** 0.007	-0.138** 0.002
DC/GDP									1.000	-0.038 0.406	0.077 0.099	-0.035 0.432	-0.046 0.305
EF										1.000	0.414** 0.000	0.046 0.313	-0.438** 0.000
PS											1.000	0.194** 0.000	-0.249** 0.000
OPEN												1.000	-0.068 0.135
INF													1.000

Notice a: \* Correlation is significant at 0.05 level (2-tailed). \*\* Correlation is significant at 0.01 level (2-tailed).

Notice b: (P-Value in Parentheses). Growth is real per-capita GDP growth. POP is population growth rate. EDUC is secondary school enrolment rate. INVES is value investment as percentage of GDP. MC/GDP is market capitalisation ratio divided by GDP. VT/GDP is value traded ratio divided by GDP. TURNOVER is the total of equity transactions divided by market capitalisation. BAR is the total asset of the banking sector divided by GDP. DC/GDP is domestic credit ratio in the ratio of bank claims on private sector GDP. EF is economic freedom. PS is political stability and OPEN is a measure of openness calculated as the sum of imports and exports divided by GDP. INF is inflation rate.

Source: Developed for this research from Section 9.4 Data and Summary Statistical Analysis.

## 9.5 ANALYTICAL TECHNIQUE

Results obtained from equation 9.16 estimated using 2TSLS with OLS, where these estimates are reported to have been founded upon both bank and market-based indicator development measures from 1995 to 2006. In order to reduce the potential econometric problems, such as heteroscedasticity, GDP growth was used as a deflator in accordance with the suggestion of Demirgüç-Kunt and Levine (1996) and Levine and Zervos (1996, 1998b). In papers, Ketteni et al. (2007) empirically assess the relationship between financial development and economic growth rate in order to explore possible non-linearity. They utilise the same data set as in the previous theoretical study but employ nonparametric estimation techniques. Therefore, they acknowledge that the relationship between finance and growth is linear when account is taken of non-linearity between initial per-capita income and human capital on the one hand and economic growth on the other. This chapter additionally uses heteroscedasticity-consistent standard error test based on the White test, but covariance for mitigating heteroscedasticity in calculating statistics, original regressors and their squares, could not reject the null of homoscedasticity. It is important, before analysing the results, to mention that all regression models estimated in the first difference are stationary. To avoid misspecification of the estimated regressions, two dummy variables have been utilised, dummy intercept and dummy interaction variables, to identify significant differences in the relationships between per-capita real GDP growth and the explanatory variables. Practices established in the literature by used natural log (L) for initial per-capita income IPCY to control for convergence<sup>60</sup>. According to neoclassical theory (Chapter Four), the coefficient associated to per-capita income represents the convergence effect and thus should be negative.

## 9.6 Empirical Results and Analysis

Table 9.4 illustrates bank-based indicator results relating to BAR and DC/GDP. In panel A: BAR from model 2 represents basic regression, where its explanatory variables appear in all regressions. Dependent variables are economic growth proxied by per-capita real GDP growth. Other variables are natural logarithm of initial per-capita income, population growth rate, secondary school enrolment rate and investment ratio and natural logarithm of banking assets ratio including change of per-capita income. As the results demonstrate, LIPCY is strongly positive and significant, indicating that there is conditional convergence to the higher per-

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<sup>60</sup> If convergence is confirmed, then a country a relatively lower level of initial per-capita GDP will grow faster since it is that much farther away from its steady state and must catch up.

capita income levels of some emerging market nations such as China, Hungary, India, Iran, Poland, Qatar, Russia, Sudan and UAE . The investment ratio is, as expected, positive and significant. Model 3 adds the interaction term between BAR and change of per-capita income, both positive and significant, thus validating the key hypothesis of this study. The regression explains 66.5 *per cent* of the variation in measuring the economic growth of emerging market nations. *F*-statistics for regression,  $F = 125.137$ , reject the null hypothesis of no explanatory power for the regression as a whole *at the one-per cent level*.

Models 6-8 include standard control variables: economic freedom ratio (EF), political stability (PS), sum exports and imports ratio (OPEN) and inflation (INF). They provide *a robustness test* for this result since the interaction term,  $LBAR \times \Delta PCI$ , remains positive and significant. Note that EF has a significant negative effect on PCYG, whereas PS has an insignificant effect since it accurately reflects the difference between political stability and national situations. As observed by AON Corporation (2004), many Middle Eastern nations have witnessed their political stability downgraded owing to continued uncertainty in Iraq, possibility of further coalition activity elsewhere in the region and terrorism. AON Corporation (2004) adds that ongoing unrest and terrorist activity in the Middle East continue to pose a *high* risk to foreign investors. In the future, the AON Corporation (2005) explains, Middle Eastern nations continue to cause concern, particularly Iraq, where the outlook is increasingly pessimistic. This region is a common site for many conflicts, imposition of economic sanctions and wars. The Iraq War, fighting international terrorism, sanctioning Syria, finding a solution for the Palestinian problem and the Iranian nuclear programme are all examples of potential political crises. As revealed by the UN and US, such incidents include Libya (1986-1999), Iraq (1990-2003), Somalia (1992- to data), Sudan (1996-2001) and Yemen (1994). Wars which happened in the region are related to both the Arab-Israel conflict and related crises.

The region has also been host to other disputes and wars not directly involving Israel. Many such conflicts are related to Iraq, including the Iran-Iraq War (1980-1988), the Iraq invasion of Kuwait (1990), the Gulf War (1991) and the Iraq War (2003). Other wars that occurred in the context of the Middle East include the Yemeni War (1979) and the Lebanon War (1982, 1995-2000). Furthermore, the region regularly witnesses coups d'état. Currently-serving leaders who came to power via coups include those of Libya (1969), Tunisia (1987), Sudan (1989), Qatar (1995) and Mauritania (2005, 2008). More surprising is the positive effect of the INF ratio. This could be attributed not only to the negative impact that interest rate has on the growth, but also effectiveness of fiscal policy, given that most emerging markets follow a fixed exchange rate system, which makes monetary policy ineffective, especially among Arab

nations. The effect of the growth of openness, as measured by ratio of export, plus import to GDP is negatively and statistically correlated in a significant ratio with economic growth. This result is consistent with the empirical findings of Bloom et al. (1999) and Bassanini et al. (2001), besides others. The implication of this result is that when the value of exports and imports relative to a nation's GDP increases, economic growth increases likewise. Exports, therefore, can affect economic growth via two channels, low domestic demand, while exports provide an outlet for this excess production and generate income. Second, in the long-term, exports aid growth because they tend to gather technical progress and further savings. Additionally, they improve the national credit rating by generating hard currency and, thus, facilitating ease of foreign loans.

Table 9.4 reports results for the second bank-based indicator, the DC ratio. They duplicate almost exactly those obtained for BAR, except that the LDC ratio is negative in models 3-4. The INF is also negative in model 7, but investment ratio, as expected, has a strongly significant and effective relationship exhibiting economic growth. The result is consistent with the findings by Kean (1983) and Singh (1992a) that the pricing of shares are critical as to how well the stock market can perform its allocative functions. An efficient pricing process will reward the well managed and profitable firms by valuing their shares more highly than these of unsuccessful and unprofitable firms, which in aggregate has an effect on economic development in the long-term. As can be observed, the regression explains about 69.6 *per cent* of variation in measuring economic growth of emerging market economies. However, *F*-statistics for the regression decline to 75.106, but still reject the null hypothesis of no explanatory power of the regression as whole *at the one-per cent level*. In panels A and B it can be noted that population growth rate as measured by the labour force has a negative effect on efficiency-related growth rate. This result is related to human capital rate which affects per-capita real GDP growth. Individual coefficients on the regression enter with appropriate signs. Human capital stock proxied by secondary school enrolment rate, enters positively, but not statistically significant *at the one-per cent level*. This could be explained by reference to the fact that, among most emerging Africa and Arab market nations, unemployment has risen. 2006 saw the highest unemployment with Algeria (15.7 *per cent*), Bahrain (15 *per cent*), Iran (15 *per cent*), Lebanon (20 *per cent*), Libya (30 *per cent*), Mauritania (20 *per cent*), Oman (15 *per cent*), South Africa (25.5 *per cent*), Sudan (18.7 *per cent*), Yemen (35 *per cent*) and Zimbabwe (80 *per cent*) all suffering from high levels of unemployment, especially the structural type where there is a mismatch between the output of the education system, the labour force and the economic needs.

Table 9.4 Regression Results: Bank-based Indicators

Dependent Variable: PCYG								
Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
<b>Panel A: BAR</b>								
Constant	1.194 (3.732)**	-0.260 (-0.151)	0.917 (0.565)	-0.464 (-0.270)	-2.645 (-1.698) <sup>†</sup>	-2.828 (-1.809) <sup>†</sup>	-2.326 (-1.517)	-2.306 (-1.511)
LIPCY	4.600 (22.398)**	4.592 (22.319)**	4.283 (21.731)**	4.174 (21.019)**	3.875 (21.538)**	3.845 (21.200)**	3.724 (20.760)**	3.724 (20.798)**
POP	-0.35 (-0.396)	-0.031 (-0.347)	-0.96 (-1.155)	-0.090 (-1.076)	-0.143 (-1.886) <sup>†</sup>	-0.159 (-2.065)*	-0.195 (-2.577)*	-0.195 (-2.588)*
EDUC	0.030 (0.998)	0.032 (1.042)	0.034 (1.183)	0.028 (0.975)	0.035 (1.341)	0.040 (1.530)	0.044 (1.723) <sup>†</sup>	0.044 (1.724)*
INVES	0.030 (2.913)**	0.026 (2.412)*	0.025 (2.457)*	0.025 (2.417)*	0.024 (2.575)*	0.24 (2.543)*	0.019 (2.051)*	0.019 (2.077)*
LBAR		0.817 (0.858)	0.242 (0.270)	2.030 (1.945)*	3.311 (3.499)**	3.363 (3.553)**	3.371 (3.656)**	3.372 (3.663)**
LBAR x $\Delta$ PCI			0.002 (7.383)**	0.002 (7.292)**	0.002 (6.835)**	0.002 (6.884)**	0.002 (6.857)**	0.002 (6.868)**
EF				-0.032 (-3.699)**	-0.033 (-4.180)**	-0.032 (-4.113)**	-0.039 (-4.830)**	-0.039 (-5.007)**
PS					-0.001 (-0.020)**	-0.006 (-0.217)	-0.009 (-0.351)	-0.009 (-0.373)
OPEN						0.012 (1.237)	0.007 (0.738)	0.007 (0.731)
INF							0.001 (0.159)	
$R^2$	0.616	0.616	0.665	0.675	0.711	0.712	0.716	0.716
Adj. R (%)	0.612	0.611	0.659	0.669	0.704	0.704	0.707	0.708
F-Ratio	152.516**	122.075**	125.137**	108.940**	104.311**	93.036**	82.654**	92.108**
D.W.	1.621	1.628	1.425	1.468	1.388	1.389	1.348	1.416
<b>Panel B: DC/GDP</b>								
Constant	1.194 (3.732)**	0.817 (1.199)	1.315 (1.998)*	2.906 (3.405)**	1.775 (2.264)*	1.696 (2.151)*	2.168 (2.711)**	2.114 (2.729)**
LI PCY	4.600 (22.398)**	4.597 (22.356)**	4.392 (21.986)**	4.332 (21.476)**	4.001 (21.733)**	3.979 (21.438)**	3.845 (20.908)**	3.844 (20.936)**
POP	-0.35 (-0.396)	-0.025 (-0.278)	-0.071 (-0.827)	-0.069 (-0.793)	-0.122 (-1.544)	-0.134 (-1.677) <sup>†</sup>	-0.170 (-2.168)*	-0.169 (-2.159)*
EDUC	0.030 (0.998)	0.029 (0.963)	0.032 (1.118)	0.026 (0.863)	0.033 (1.213)	0.037 (1.352)	0.040 (1.519)	0.040 (1.523)**
INVES	0.030 (2.913)**	0.030 (2.954)**	0.026 (2.677)**	0.031 (3.145)**	0.036 (3.995)**	0.036 (3.984)**	0.032 (3.570)**	0.032 (3.565)**
LDC/GDP		0.214 (0.627)	-0.018 (-0.054)	-0.160 (-0.438)	0.373 (1.100)	0.372 (1.096)	0.434 (1.310)	0.442 (1.339)
LDC/GD x $\Delta$ PCI			0.002 (5.995)**	0.002 (5.908)**	0.002 (5.849)**	0.002 (5.875)**	0.002 (5.921)**	0.002 (5.923)**
EF				-0.024 (-3.019)**	-0.019 (-2.658)**	-0.019 (-2.573)*	-0.026 (-3.449)**	-0.025 (-3.498)**
PS					-0.004 (-0.165)	-0.008 (-0.314)	-0.013 (-0.505)	-0.013 (-0.477)
OPEN						0.010 (0.937)	0.004 (0.409)	0.004 (0.427)
INF							-0.002 (-0.278)	
$R^2$	0.616	0.616	0.649	0.656	0.691	0.692	0.696	0.696
Adj. R (%)	0.612	0.611	0.644	0.649	0.684	0.683	0.687	0.688
F-Ratio	152.516**	121.897**	116.550**	99.504**	94.986**	84.499**	75.106**	83.677
D.W.	1.621	1.623	1.504	1.527	1.392	1.393	1.340	1.462

Notice a: Figures between parentheses are heteroscedasticity-consistent t-statistics. \* Significant at 0.05 level, \*\* Correlation is significant at 0.01 level, <sup>†</sup> significant at 0.001 level.

Notice b: The sample period is 1995-2006. PCYG is per-capita income growth, LIPCY is natural logarithm of initial per-capita income and POP is population growth rate. EDUC is secondary school enrolment rate. INVES is value investment as percentage of GDP. LBAR is the natural logarithm of bank asset, LBAR x  $\Delta$  PCI interaction with change per-capita income. DC/GDP is domestic credit ratio in the ratio of bank claims on private sector GDP, LDC/GD x  $\Delta$  PCI interaction with change per-capita income. EF is economic freedom. PS is political stability and OPEN is a measure of openness which is calculated as sum of imports and exports divided by GDP. INF is inflation rate. R Adjusted is the usual  $R^2$ , adjusted for the degrees of freedom; DW is the Durbin-Watson test for residual serial correlation. F-test tests the null hypothesis that all coefficients apart from the intercept are zero.

As for market-based development indicators, their results are listed in Table 9.5, and it can be observed from all panels that the investment ratio remains positive and significant *at the one-per cent level* but, unlike the comparable result for the MC ratio, it has no significant independent effect on investment efficiency, while its interaction with changing PCI is positive and significant. However, MC ratio can have a positive impact on investment efficiency occurring with more private resource flows. Model 3 in Table 9.5 demonstrates that the most important result in this regression is that stock market indicators as proxied by market capitalisation adjusted for GDP enter an extremely significant *at one-per cent level* positive correlation with economic growth. A one-percentage point increase in the growth rate of market capitalisation to GDP is associated with a 0.420 percentage point increase in real per-capita GDP growth. This result is inconsistent with the findings in Levine and Zervos (1996, 1998b). Their results suggested that market capitalisation is not a sound predictor of economic growth. However, this finding is consistent with that of models 5-6 in Table 9.5. Results in Tables 9.4 and 9.5 mirror, to a large extent, those obtained for bank development indicator measures, with the interaction terms between LIPCY ratio and each of the value-traded and turnover ratios being positive and significant. The fit of the regressions with an  $R^2$  greater than 67 *per cent* is relatively satisfactory. The  $F$ -ratio in each cited regression rejects the null hypothesis of having no explanatory power for the regression as a whole being better than *at the one-per cent level*.

It should be noted that the coefficient of the banking-based development indicators (0.442) is larger than the coefficient of the stock market-based development indicator (0.018), suggesting that banking sector development has a greater effect upon economic growth of banks than on stock market development. A one percentage point increase in the growth of banks lending to the private sector to GDP is associated with a 0.442 percentage point increase in real per-capita GDP growth. The fit of this regression with an  $R^2$  of 69.6 *per cent*, also the  $F$ -statistics,  $F=83.677$  rejecting the null hypothesis of no explanatory power for the regression as a whole is better than *at the one-per cent level*, while a one percentage point increase in the growth rate of market capitalisation to GDP is associated with a 0.018 percentage point increase in real per-capita GDP growth. This may simply reflect the translation ratio between market capitalisation and eventual finance via new share issues. It may additionally indicate that the banking sector is more significant for real growth than the stock market in a developing country. For an emerging market without a mature entrepreneurial experience, banks will be relatively more significant. This argument appears to be applicable to the Libyan economy during the initial stages of the period under study.

**Table 9.5 Regression Results: Market-based Indicators**

Dependent Variable: PCYG								
Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
<b>Panel A: MC/GDP</b>								
Constant	1.194 (3.732)**	1.199 (3.702)**	1.230 (3.848)**	2.402 (3.780)**	2.316 (4.045)**	2.222 (3.815)**	2.841 (4.660)**	2.831 (4.752)**
LIPCY	4.600 (22.398)**	4.588 (21.890)**	4.515 (21.714)**	4.440 (20.925)**	4.097 (21.011)**	4.077 (20.760)**	3.936 (20.213)**	3.935 (20.253)**
POP	-0.35 (-0.396)	-0.007 (-0.082)	-0.022 (-0.243)	-0.023 (-0.255)	-0.106 (-1.268)	-0.117 (-1.390)	-0.155 (-1.866) <sup>†</sup>	-0.155 (-1.868) <sup>†</sup>
EDUC	0.030 (0.998)	0.033 (1.094)	0.034 (1.112)	0.029 (0.927)	0.040 (1.414)	0.044 (1.540)	0.045 (1.598)	0.045 (1.601)
INVES	0.030 (2.913)**	0.033 (3.173)**	0.034 (3.276)**	0.037 (3.576)**	0.039 (4.119)**	0.039 (4.117)**	0.036 (3.747)**	0.036 (3.767)**
LMC/GDP		-0.302 (-1.735) <sup>†</sup>	0.420 (2.402)*	0.219 (1.073)	-0.102 (-0.527)	-0.115 (-0.593)*	0.016 (0.081)	0.018 (0.090)
LMC/GD x ΔPCI			0.015 (3.347)**	0.015 (3.429)**	0.012 (2.906)**	0.012 (2.950)	0.012 (3.023)**	0.012 (3.029)**
EF				0.022 (2.239)*	-0.018 (-2.112)*	-0.018 (-2.007)	-0.026 (-2.878)**	-0.026 (-2.907)**
PS					-0.016 (-0.589)	-0.020 (-0.725)	-0.023 (-0.844)	-0.023 (-0.842)
OPEN						0.010 (0.889)	0.004 (0.370)	0.004 (0.376)
INF							-0.001 (-0.081)	
$R^2$	0.616	0.613	0.624	0.630	0.662	0.663	0.668	0.668
Adj. R (%)	0.612	0.608	0.618	0.623	0.654	0.654	0.658	0.659
F-Ratio	152.516**	117.476**	102.170**	87.147**	81.818**	72.769**	65.157**	72.618**
D.W.	1.621	1.641	1.616	1.629	1.487	1.489	1.434	1.563
<b>Panel B: VT/GDP</b>								
Constant	1.194 (3.732)**	1.321 (3.811)**	1.329 (3.828)**	2.321 (3.837)**	2.110 (3.833)**	2.022 (3.615)**	2.555 (4.391)**	2.563 (4.594)**
LIPCY	4.600 (22.398)**	4.619 (21.581)**	4.613 (21.522)**	4.555 (20.842)**	4.092 (20.846)**	4.067 (20.515)**	3.886 (19.898)**	3.886 (19.932)**
POP	-0.35 (-0.396)	-0.030 (-0.340)	-0.030 (-0.341)	-0.013 (-0.142)	-0.130 (-1.550)	-0.144 (-1.689) <sup>†</sup>	(-1.189 (-2.273)*	-0.189 (-2.278)*
EDUC	0.030 (0.998)	0.035 (1.155)**	0.033 (1.089)	0.026 (0.815)	0.033 (1.170)	0.038 (1.301)	0.036 (1.288)	0.036 (1.289)
INVES	0.030 (2.913)**	0.032 (3.053)	0.032 (3.096)**	0.036 (3.439)**	0.039 (4.050)**	0.039 (4.036)**	0.035 (3.680)**	0.035 (3.711)**
LVT/GDP		-0.122 (-1.381)	0.125 (1.412)	-0.050 (-0.485)	0.043 (0.462)	0.049 (0.526)	0.154 (1.618)	0.154 (1.620)
LVT/GD x ΔPCI			-0.004 (-0.509)	-0.002 (-0.265)	-0.035 (-2.401)*	-0.036 (-2.486)**	-0.046 (-3.212)**	-0.046 (-3.227)**
EF				-0.020 (-2.047)*	-0.016 (-1.780) <sup>†</sup>	-0.015 (-1.718) <sup>†</sup>	-0.24 (-2.674)**	-0.024 (-2.765)**
PS					-1.156 (-2.408)*	-0.166 (-2.527)*	-0.208 (-3.239)**	-2.208 (-3.244)**
OPEN						0.010 (0.910)	0.007 (0.635)	0.007 (0.634)
INF							0.000 (0.047)	
$R^2$	0.616	0.611	0.611	0.617	0.659	0.660	0.670	0.670
Adj. R (%)	0.612	0.605	0.604	0.609	0.651	0.651	0.660	0.661
F-Ratio	152.516**	115.098**	95.494**	81.548**	80.030**	71.193**	65.521**	73.027
D.W.	1.621	1.599	1.597	1.623	1.417	1.415	1.342	1.382

**Table 9.5 Continued: Regression Results: Market-based Indicators**

Dependent Variable: PCYG								
Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
<b>Panel C: TURNOVER</b>								
Constant	1.194 (3.732)**	1.251 (3.455)**	1.353 (3.744)**	2.712 (4.735)**	2.592 (5.002)**	2.514 (4.769)**	2.831 (5.098)**	2.753 (5.160)**
LIPCY	4.600 (22.398)**	4.583 (21.752)**	4.536 (21.611)**	4.443 (20.896)**	4.000 (21.002)**	3.977 (20.646)**	3.908 (20.272)**	3.908 (20.300)**
POP	-0.35 (-0.396)	-0.050 (-0.563)	-0.069 (-0.781)	-0.045 (-0.504)	-0.111 (-1.375)	-0.121 (-1.475)	-0.141 (-1.722) <sup>†</sup>	-0.139 (-1.705) <sup>†</sup>
EDUC	0.030 (0.998)	0.036 (1.202)	0.040 (1.317)	0.028 (0.900)	0.034 (1.220)	0.037 (1.329)	0.039 (1.396)	0.039 (1.407)
INVES	0.030 (2.913)**	0.028 (2.726)**	0.026 (2.573)	0.033 (3.191)**	0.037 (4.035)**	0.037 (4.034)**	0.036 (3.795)**	0.035 (3.767)**
LTURN/GDP		-0.035 (-0.266)	-0.088 (-0.663)	0.036 (0.250)	0.157 (1.229)	0.127 (1.327)	0.183 (1.403)	0.178 (1.367)
LTURN/GD x ΔPCI			0.001 (2.630)**	0.001 (2.700)**	0.001 (2.821)**	0.001 (2.865)**	0.001 (2.954)**	0.01 (2.931)**
EF				-0.027 (-3.158)**	-0.026 (-3.296)**	-0.025 (-3.260)**	-0.030 (-3.603)**	-0.028 (-3.601)**
PS					-0.015 (-0.564)	-0.019 (-0.683)	-0.022 (-0.820)	-0.021 (-0.767)
OPEN						0.009 (0.809)	0.007 (0.657)	0.007 (0.681)
INF							-0.003 (-0.511)	
$R^2$	0.616	0.612	0.619	0.629	0.669	0.670	0.672	0.671
Adj. R (%)	0.612	0.607	0.612	0.622	0.662	0.661	0.661	0.662
F-Ratio	152.516**	117.874**	100.574**	87.491**	85.071**	75.614**	67.051**	74.640**
D.W.	1.621	1.604	1.573	1.592	1.417	1.419	1.392	1.554

Notice a: Figures between parentheses are heteroscedasticity-consistent t-statistics. \* Significant at 0.05 level, \*\* Correlation is significant at 0.01 level, <sup>†</sup> significant at 0.001 level.

Notice b: The sample period is 1995-2006. PCYG is per-capita income growth, LIPCY is the natural logarithm of initial per-capita income, and POP is population growth rate. EDUC is the secondary school enrolment rate. INVES is the value investment as percentage of GDP. LMC/GDP is the natural logarithm of market capitalisation ratio divided by GDP. LMC/GD x ΔPCI interaction with change per-capita income. LVT/GDP is the natural logarithm of value traded divided by GDP, LVT/GD x ΔPCI interaction with change per-capita income. LTURN/GDP is the natural logarithm of turnover ratio is the total of equity transactions divided by market capitalisation. EF is economic freedom. PS is political stability OPEN is a measure of openness which is calculated as the sum of imports and exports divided by GDP. INF is inflation rate. R adjusted is the usual  $R^2$ , adjusted for the degrees of freedom; DW is the Durbin-Watson test for residual serial correlation. F-test tests the null hypothesis that all coefficients apart from the intercept are zero.

Source: Developed for this research from Section 9.4 Data and Summary Statistical Analysis.

## 9.7 DETERMINANTS OF BANKING AND FINANCIAL MARKET DEVELOPMENT INDICATORS

This section will provide an analysis of the prospect for financial development in emerging market economies. In particular, the investigation model points to the following facts: the stock market is complementary rather than a substitute for the banking sector in providing financial services to the corporate sector in an emerging market, whereas stock market and banking sector development have different effects on a small and a larger economy. Changes in stock market development are likely to bear more significant influences upon a large



economy than upon smaller one, while changes in banking sector development are prone to have more influence on a less developed economy than on a more developed one.

Tables 9.6, 9.7 and Figure 9.3 present the banking sector and stock market indicators between four groups of 42 emerging markets for each group including Libya. The findings from Table 9.6 show that the coefficient of banking sector development indicators 1.141 and 0.615 in group three (Libya, Argentina, Brazil, Bulgaria, Chile, Fiji, Lebanon, Malaysia, Mexico, Poland, Romania, Russian, South Africa, Turkey and Venezuela) is larger than the coefficient of 0.321 and 0.010 of group two (Libya, Algeria, China, Egypt, India, Indonesia, Iran, Jordan, Morocco, Philippines, Sudan, Syria, Thailand and Tunisia), but the fit of group two, with an  $R^2$  of 79.2 and 77.1 *per cent*, is superior to that obtained by group three, where banking sector development indicators were proxied by the natural logarithm of bank asset ratio which is the total assets of banking sector and domestic credit ratio to the ratio of bank claims on private sector GDP. The  $F$ -statistics of group two,  $F= 132.955$  and  $121.111$ , is additionally improved, which rejects the null hypothesis of no explanatory power for the regression as a whole at better than at *one-per cent level*. This finding is in contradiction to the finding related by Demetriades and Hussein (1996) who argue that in developing countries it is more likely that bank deposit liabilities are rising and credit to the private sector remains unchanged, that is because government increases reserve requirements. According to the Mckinnon/Shaw inside money model, credit to the private sector has a direct impact on the quantity and quality of investment and economic growth (Chapter Four). Sinha and Macri (1999) also examine the causality between economic growth and financial development, measured by M1, M2 and domestic credit, for eight Asian countries. Their results show that there is a two-way causality relationship between growth and financial variables for India and Malaysia, one way causality from financial variables to growth for Japan and Thailand and reverse causality for Korea, Pakistan and the Philippines. The result in Table 9.7 mirrors to a large extent that obtained for bank development indicator measures, with both market development indicators seemingly having a negative and insignificant independent effect on per-capita income growth rate. As results in groups two and three are mainly similar to those included in groups two and three, in Table 9.6 at any rate, given the unbalanced nature of data set and the limited country treatment, the results of stock market development should be viewed as provisional at best.

Stock market development indicators in Table 9.7 have a negative insignificant effect on growth in groups two and three. This result is consistent with Levine and Zervos (1996, 2000) wherein they failed to establish a relationship between stock market capitalisation and growth in per-capita income growth; Rajan and Zingales (1998) failed to identify market capitalisation

as having an effect on the relationship growth of financial development indicators. To illustrate the significance of this result, it would be necessary to consider the “*change in real per-capita income growth*” which indicates how much faster the economic growth is at level percentage. The result in Table 9.7 demonstrates that most groups have a significant effect on the economic growth rate. Test statistics presented in Tables 9.6 and 9.7 indicate that the null hypothesis cannot be rejected stating that there is no correlation between error terms and investment vector and that models are correctly specified.

**Table 9.6 Banking Sector and Growth: Per-capita Real GDP as a Function of Proxy Measures for Banking Development Indicators**

Independent Variables	Group (1)	Group (2)	Group (3)	Group (4)
<b>Panel A: BAN</b>				
(Constant)	4.759 (1.744)*	0.186 (0.096)	2.976 (1.281)	-1.339 (-0.377)
LPCYG	2.401 (8.010)**	8.106 (19.675)**	4.867 (16.637)**	5.376 (11.598)**
INVES	0.021 (0.804)	0.008 (.605)	0.045 (2.743)**	0.048 (1.151)
LBAR	-1.538 (-0.974)	0.321 (0.292)	1.141 (0.869)	0.940 (0.455)
LBAR x ΔPCI	0.005 (4.569)**	0.002 (3.565)**	0.001 (3.691)**	0.004 (6.692)**
Observation	48	145	142	90
$R^2$	0.716	0.792	0.726	0.718
Adj. R (%)	0.689	0.786	0.718	0.705
F-Ratio	27.080	132.955	90.949	54.175
Sig. (F-Ratio)	0.000	0.000	0.000	0.000
D-W	1.434	1.809	1.725	1.386
<b>Panel B: DC/GDP</b>				
(Constant)	2.165 (1.187)	-0.491 (-0.721)	0.025 (0.015)	-0.833 (-0.444)
LPCYG	2.510 (7.956)**	8.350 (19.777)**	4.899 (16.540)**	5.522 (11.956)**
INVES	0.011 (0.409)	0.006 (0.491)	0.036 (2.335)*	0.070 (1.819)*
LDC/GDP	0.026 (0.025)	0.010 (0.029)	0.615 (0.943)	0.441 (0.473)
LDC/GDP x ΔPCI	0.003 (3.649)**	0.001 (1.895)*	0.001 (2.517)*	0.006 (7.158)**
Observation	48	145	142	90
$R^2$	0.676	0.777	0.716	0.729
Adj. R (%)	0.646	0.771	0.707	0.716
F-Ratio	22.433	121.111	86.207	57.126
Sig. (F-Ratio)	0.000	0.000	0.000	0.000
D-W	1.660	1.896	1.759	1.523

Notice a: Figures between parentheses are heteroscedasticity-consistent t-statistics. \* Significant at 0.05 level, \*\* Correlation is significant at 0.01 level.

Notice b: Group (1) Low-income countries: Libya, Bangladesh, Nigeria, Pakistan, Yemen and Zimbabwe. Group (2) Lower-middle-income countries: Libya, Algeria, China, Egypt, India, Indonesia, Iran, Jordan, Morocco, Philippines, Sudan, Syria, Thailand and Tunisia. Group (3) Upper-middle-income countries: Libya, Argentina, Brazil, Bulgaria, Chile, Fiji, Lebanon, Malaysia, Mexico, Poland, Romania, Russia, South Africa, Turkey and Venezuela. Group (4) High-income countries: Libya, Bahrain, Czech Republic, Hungary, Israel, Kuwait, Oman, Qatar, Saudi Arabia and UAE.

Source: Developed for this research from Section 9.4 Data and Summary Statistical Analysis.

As can be noted from Tables 9.6 and 9.7, the regression coefficients are estimated. Findings suggest that countries with common geographic ties (i.e. MENA and Mediterranean Rim countries) may co-integrate with one another. Common economic and geographic ties may lead the national stock markets to follow the same stochastic trend.

**Table 9.7 Stock Market and Growth: Per-capita Real GDP as a Function of Proxy Measures for Stock Market Development Indicators**

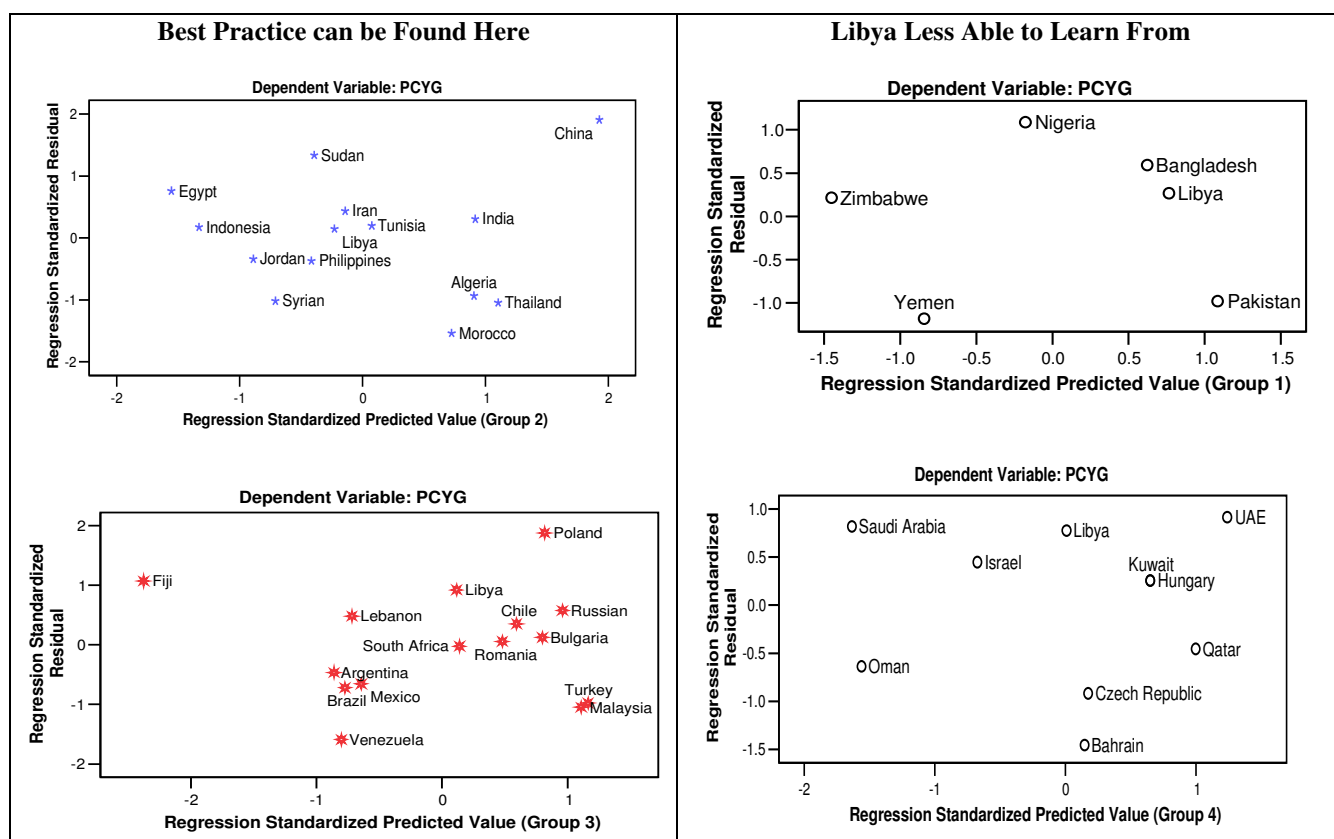
Independent Variables	Group (1)	Group (2)	Group (3)	Group (4)
<b>Panel A: MC</b>				
(Constant)	2.447 (6.654)**	-0.382 (-1.162)	0.953 (2.875)**	-0.164 (-0.171)
LPCYG	2.404 (8.184)**	8.395 (19.622)**	5.080 (17.567)**	5.669 (10.426)**
INVES	-0.011 (-0.336)	0.003 (0.259)	0.053 (3.375)**	.067 (1.388)
LMC/GDP	0.201 (0.307)	-0.197 (-0.607)	-0.680 (-3.165)**	0.484 (0.879)
LMC/GDP x ΔPCI	0.121 (4.504)**	0.001 (1.936)*	0.004 (0.954)	(0.025) (5.324)**
Observation	48	145	141	79
$R^2$	0.718	0.778	0.719	.670
Adj. R (%)	0.691	0.771	0.711	.653
F-Ratio	27.308	121.524	87.083	37.639
Sig. (F-Ratio)	0.000	0.000	0.000	0.000
D-W	1.589	1.888	1.996	1.476
<b>Panel B: TV/GDP</b>				
(Constant)	2.528 (6.311)**	-0.461 (-1.437)	1.206 (3.347)**	1.125 (1.664)
LPCYG	2.698 (7.791)**	8.658 (20.434)**	5.306 (17.576)**	4.653 (11.917)**
INVES	0.028 (0.844)	0.005 (0.381)	0.055 (3.445)**	0.062 (1.782)*
LVT/GDP	-0.300 (-1.225)	-0.081 (-0.742)	-0.401 (-3.069)**	-0.276 (-1.564)
LVT/GDP x ΔPCI	.006 (.818)	0.840 (0.015)	0.002 (0.328)	0.007 (1.091)
Observation	48	145	136	78
$R^2$	0.592	0.772	0.719	0.683
Adj. R (%)	0.554	0.766	0.710	0.665
F-Ratio	15.623	117.781	83.634	39.290
Sig. (F-Ratio)	0.000	0.000	0.000	0.000
D-W	1.942	1.882	1.999	1.636
<b>Panel C: TURO</b>				
(Constant)	2.754 (6.400)**	-0.498 (-1.586)	1.181 (3.019)**	0.472 (0.491)
LPCYG	2.752 (8.052)**	8.563 (19.902)**	5.387 (17.616)**	5.768 (10.156)**
INVES	0.014 (.450)	0.006 (0.473)	0.046 (2.961)**	0.050 (1.048)
LTURNOVER	-0.475 (-1.849)*	-0.051 (-0.342)	-0.416 (-1.932)*	-0.176 (-0.472)
LTURNOVER x ΔPCI	0.002 (0.976)	0.012 (0.525)	0.021 (0.176)	0.005 (3.361)**
Observation	48	145	141	84
$R^2$	0.608	0.772	0.710	0.596
Adj. R (%)	0.572	0.766	0.701	0.576
F-Ratio	16.703	117.743	83.226	29.160
Sig. (F-Ratio)	0.000	0.000	0.000	0.000
D-W	16.703	1.889	1.893	1.761

Notice a: Figures between parentheses are heteroscedasticity-consistent t-statistics. \* Significant at 0.05 level, \*\* Correlation is significant at 0.01 level.

Source: Developed for this research from Section 9.4 Data and Summary Statistical Analysis.

Scatterplots are utilised in Figure 9.3 to display average annual banking and stock market development indicators against real GDP per-capita growth rate during the period 1995-2006 for 42 emerging market economies. This allows a more subjective method of identifying influential observations of the partial relationship between each of the banking and stock market development indicators to identify the outliers that may be influencing the slope and estimated regression line. Thus, this sample rejects the hypothesis of absolute convergence. For each observed value of banking and stock market indicators, a range of predicted values can be seen. If the assumption of equal variances is met, the range should generally be the same for all observed banking and stock market development indicators. For a large observed stock market value, the range of predicted values is much narrower than elsewhere in the plot, because there is a natural limit on banking and stock market development indicators which most of the highly developed nations have reached. The effect is within the group of nations suggesting that a more active stock market is associated with growth ratios for higher significant compared to the presence of less active stock markets.

**Figure 9.3 Scatterplot of Predicted and Observed Variables**



Source: Analysis of SPSS output from statistics data.

Therefore, low-income nations could increase their growth rates by creating an active stock market. Rioja and Valev (2004) argued that the relationship between financial development

and economic growth has received much attention in recent years. They adopted a broad sample of 74 countries over the 1960-1995 period and found that the effect of financial markets on growth is not usually positive but, where it is, its size differs. They suggested that financial development has a strong positive effect on economic growth when it reaches the threshold of the so-called “*middle region*”. Under this threshold, called the “*low region*”, financial development suggests a negative, zero or positive effect. In the “*high region*” the growth effect declines as financial development increases.

The problem of using a probable sample selection is related to econometric issues. For example, heteroscedasticity might be attributable to regression scale differences as a result of having mixed small and large stock market indicators in the same sample. Only countries with sufficient stock market activities should be included to permit addition in data bases. This study has data on all non-stock market activities for an additional five nations (Algeria, Libya, Sudan, Syria and Yemen), where overt observations on stock market transactions in these emerging markets do not exist. Thus, for the aforementioned nations, values were also entered for market capitalisation, value trading and turnover ratios. Zero is not an extreme assumption. Table 9.2 explains that the mean values for market capitalisation, total value traded and turnover ratios including standard deviations may create statistical problems, where weighted least square regressions are used. These procedures are adopted to improve reliability of this study’s results, while a weight of 1 is imposed on all nations where direct stock market data is added. Alternatively, weights of 0, 0.25, 0.50 and 0.75 are to be imposed, including 1 on the countries where a zero is added for stock market development indicators<sup>61</sup>. However, it is not evident how much weight they are keen to afford to zero assumptions. Table 9.8 demonstrates results on stock market and banking development indicators in growth regression with different weights. In consideration of these countries and weight results, however, they merely suggest there is an exogenous component of stock market development linked to economic growth. Thus, these results are insufficient, in themselves, to lead us to conclude that the stock market as a leading sector in emerging markets is significant in its process of economic development; this finding indicates the banking sector performs dissimilar functions from those performed by the stock market.

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<sup>61</sup> One of the greatest difficulties is in estimating the value of stock market indicators data solving sample selection problem. Some researchers’ base their estimate on an assumption of stock market indicators using weighted last squares regressions (see for example, Levine and Zervos, 1996). Minier (2001) used control group to solve that problem as compared with countries that open a stock market to a priori a similar countries that do not. Others suggest using dummy variables equalling 1 to 1 for stock market development indicators for no available data for countries, and 0 otherwise.

**Table 9.8 Initial Stock Market Development, Banks and Growth, 42 Country Sample**  
**(Dependent Variables: Real Per-capita GDP Growth 1995-2006)**

Independent Variables	Weight = 1		Weight = 0.75		Weight = 0.50		Weight = 0.25		Weight = 0	
Stock Market Indicator (SMI)	BANKI	SMI	BANKI	SMI	BANKI	SMI	BANKI	SMI	BANKI	SMI
MC/GDPI	0.018 (0.532)	0.028 (1.168)	0.018 ( 0.525)	0.021 (0.858)	0.018 (0.530)	0.021 ( 0.876)	0.018 (0.535)	0.021 (0.906 )	0.018 (0.540)	0.027 (1.117)
VT/GDPI	0.001 (1.452 )	0.001 (1.622)	0.001 (1.448)	0.001 (1.604)	0.001 (1.452)	0.001 (1.602)	0.001 (1.455)	0.001 (1.599)	0.001 (1.459)	0.001 (1.492)
TURNOVERI	0.002 ( 0.819)	0.001 (0.234)	0.002 (0.824 )	0.001 (0.322)	0.002 (0.825)	0.001 (0.371)	0.002 (0.826)	0.001 (0.440)	0.002 (0.828)	0.001 (0.579)

Notice a: Weighted Least Squares: Indicated weights are given to countries without direct measures of stock market development indicators.

Notice b: BANKI is measured by the value of banking assets ratio and the value of the ratio of bank credit to private entries divided by GDP. MC/GDPI is market capitalisation ratio measured by market capitalisation divided by GDP. VT/GDP is value traded ratio by GDP. TURNOVER is turnover ratio is the total of equity transactions divided by market capitalisation. BANKI measured by: BAR is the total asset of the banking sector divided by GDP and DC/GDP is domestic credit ratio in the ratio of bank claims on private sector GDP. Besides BANKI and the indicated stock market indicator SMI, the previous regression in Table 9.4 also included as explanatory variable logarithms of initial real per-capital GDP, of initial secondary school enrolment, of initial population growth rate and the logarithm of initial investment ratio. Initial values of economic freedom, political stability, the sum of imports and exports divided by GDP and inflation.

Source: Developed for this research from Section 9.4 Data and Summary Statistical Analysis.

***Discussion of Results***

This study has attempted to investigate empirically the relationship of independent correlation between stock market development and economic growth in the emerging market, including Libya. Given the data's still incomplete condition, conclusions reached in this chapter based on the simple econometric testing could only be regarded as provisional and as providing preliminary answers to research questions. However, this is the first study to incorporate such a broad collection of indicators to measure a transferable model from a stock market in emerging markets into a small developing country like Libya and to test its correlation with the economic growth process. It applies option estimation and a testing procedure that departs from former studies in this subject. Tables 9.4 and 9.5 illustrate the importance factors of investment proxied by gross capital formulation divided by GDP, emphasised by the strongly positive and statistically significant *at the one-per cent level* relationship that is exhibited in economic growth. This result is consistent with the findings in Sinha and Macri (1999). A one-percentage point increase in growth rate on investment to GDP is associated with the arrangement between 0.030 to 0.039 percentage point increases in the real per-capita GDP growth. It is consistent with the theoretical view and, too, with empirical evidence that high output growth is associated with high investment rates (see i.e. Fielding, 1997 and Bassanin et al., 2001). As mentioned early in Chapter Four, the suggestion behind Solow's (1956) framework is that higher investment over savings rates leads to more accumulated capital per-work, resulting in an increase in per-capita output, but at decreased rates. Under the endogenous growth theory an emphasis on broader concepts of capital, such as that of Rebelo (1991) as per-capita real GDP growth and investment ratio, tend to move in concert. The highly significant total investment coefficient may reflect the effects of entrenched technological change on aggregate supply working via the new investment.

Whilst this study has empirically established the link between stock market and economic growth of emerging markets including Libya, the entire analysis is based on stock market development indicators and market capitalisation ratio. To ascertain the *robustness* of results, this study tested whether they are particular to the choice of stock market development indicators or whether the various proxies that capture different facets of the level and the degree of the stock market give similar conclusions. The question then resembles *the various other proxies of the market development indicators also correlated with the economic growth rate of emerging market* Model 2-8 of Table 9.5 attempts to answer this question. In these models stock market or market-based development is proxied by total value traded and turnover ratios. Since the DC/GDP ratio appeared insignificantly correlated with economic

growth in models 3 and 4, this indicator was replaced with the ratio of bank assets to GDP as a proxy for banking-based development in all these regressions. As this result showed, the ratio of banks' claims to private sector to GDP ratio is a finer measure of banking sector development and a better predictor of growth than banking asset ratio. As argued by Beck et al. (1999a) and Levine et al. (2000), the ratio of the banks' claims to private sector to GDP has a distinct advantage over the measure of banks' asset ratio, in that it more accurately represents actual volume of funds channelled into the private sector. As is evident from Table 9.5 in each of the cited regressions, the indicator for stock market development is statistically and significantly correlated with economic growth. As can be seen from models 5-7, all liquidity indicators-value-traded and turnover ratios are statistically significant *at the one and five-per cent level* correlated with economic growth rate. Besides being statistically significant, the estimated coefficient additionally suggests that the relationship between stock market liquidity and growth is economically large. The estimated coefficient on value-traded ratio implies that with an increase of a one-percentage point in growth rate, this variable would increase economic growth by a 0.154 percentage point. The estimated coefficient of turnover ratio further suggests a similarly large economic relationship between stock market liquidity and economic growth. Consequently, an increase of a single-percentage point in the growth rate of turnover ratio would increase economic growth by a 0.183 percentage point.

Regarding the banking sector case, as can be observed from Table 9.4, in each of the previous-cited regressions, bank-based development indicators proxied by the ratio of bank assets to GDP and the ratio of bank claims on private sector to GDP enter statistically *at the one-per cent level* correlated with economic growth rate. Empirically, DeGregorio and Guidotti (1995) attempted to examine the relationship between financial development and economic growth. The ratio of bank credit to GDP is used to measure the degree of financial development during 1960-1985 for 98 countries. The result suggests that economic growth can be positively affected by bank credit. They also found that the impact of financial intermediation on economic growth seems to be higher in high-income countries than in low-income countries. They also found that there is a strong negative correlation between bank credit and growth in twelve Latin American countries and concluded that the negative correlation among those twelve Latin American countries is due to the lack of regulation that to a fragile financial system. Mandelker and Tando (1985) find that money growth has a positive impact on real stock returns in six major industrialised countries. Aspern (1989) also, finds that money supply is positively related to stock prices in ten European countries. This result confirms that both the banking sector and the stock market are significant in the growth process of emerging



markets. This finding is in contradiction to the finding related by Demetriades and Hussein (1996), who use causality test between financial development (as proxied by bank deposit liabilities to GDP and the ratio of bank claims on the private sector to GDP) and real GDP. They found that finance is playing a limited role in the economic growth process. The study also found that there is two way causality between financial development and economic growth. The study highlighted the dangers of statistical inference based on cross-country studies alone, which implicitly treat different economies as homogeneous entities. A possible explanation could be that this study suffers from poor sample size, as the authors used only 27 observations per country, and they also ignored the significant role of stock market in determining economic growth.

The result further validated the argument that stock market performance of various sets of functions is not provided entirely by the banking-based system. The fit of regression in Table 9.4 with an  $R^2$  greater than 70 *per cent* is relatively satisfactory. The  $F$ -statistics in each of the cited regressions rejects the null hypothesis that no explanatory power for the regression as a whole is better than *at the one-per cent level*. However, most of the evidence supports the view that the relationship between stock market development and economic growth in the emerging market is bi-directional. Greater development in the stock market causes higher real economic growth. This, in turn, promotes development in the stock market. As income increases, its cyclical components such as the volume of savings should impact stock market development. This reflects that a stock market open to both domestic and foreign investors may be beneficial to economic growth.

Tables 9.6 and 9.7 display the results of groups one to four, where the stock market and banking sector in emerging markets play different, but complementary, roles. A possible explanation of this result can be found in theoretical literature where banks primarily ameliorate information asymmetries, while the stock market mostly enhances liquidity and facilitates risk diversification. Thus, policies undertaken to develop the stock market need not adversely affect the existing banking system. The best practice can be found in groups 2 and 3 in emerging markets under 2SLS test (Figure 9.3), which have the potential to inform improvements to the Libyan stock market. It was observed that the results and conclusions are similar to those obtained for the whole sample. So, similarities between the two groups of emerging countries could be confirmed. Despite the difference of the economic structure of these two groups, the financial systems seem to impact homogenously on economic growth. Therefore, many of the emerging countries issued new capital market laws which aimed at encouraging private investment, increasing investor protection and enhancing the banks' role

in stimulating capital markets through the establishment of mutual funds. Specifically, their core provisions included establishing a new legal framework to govern specialised capital market companies, strengthening financial disclosure, giving foreign investors full access to the market and increasing investors' rights through provisions prohibiting unfair market practices. However, security markets in the MENA nations are still, in general, underdeveloped, with a limited number of listed companies, low free-float of shares and thin trading (see Section 9.2).

The findings are also consistent with the findings in this study of previous findings and the conclusions of Demirgüç-Kunt and Levine (1996), and Demirgüç-Kunt and Maksimovic (1995, 2000) that stock market and financial intermediary development proceed simultaneously. Consistent with the King and Levine (1993) provide the starting point in the empirical research on the relationship between finance and economic growth. They study four financial indicators (the size of the financial intermediary sector relative to GDP, the importance of banks relative to the central bank, the percentage of credit allocated to private firms out of total credit and the ratio of credit issued to private firms to GDP) and the growth indicators (real per capita GDP growth, the rate of physical capital accumulation, and the ratio of domestic investment to GDP). The empirical results of this paper show that the indicators of financial development are strongly and robustly correlated with economic growth indicators, using cross-country analyses for 77 countries over the period 1960-1989. Finally, Garcia and Liu (1999) empirically explored the determinants of stock market development, particularly market capitalisation. They also examined the association between financial intermediary development and stock market development using a sample of fifteen industrial and developing countries from 1980 to 1995. They concluded that real income level, saving rate, financial intermediary development and stock market liquidity are important predictors of market capitalisation, while macroeconomic stability does not have any explaining power. They confirmed that banks and markets are complement instead of substitutes.

## 9.8 SUMMARY AND CONCLUSION

Apart from further analysing the findings presented and discussed in Chapters Seven and Eight, this chapter has considered some significant outcomes of the *endogenous growth model* in the light of various contributions reviewed earlier from the literature. This chapter's findings contribute towards a finer understanding of differences in the financial market between the Libyan economy and other emerging markets by providing a simple, theoretical framework that links endogenous growth and current theory on functions of financial markets

and institutions, in order to investigate how the former and banking sector development indicators affect economic growth in these countries. Levine (1997: 688-689) argues: *“Although conclusions must be stated hesitantly and with ample qualifications, the preponderance of theoretical reasoning and empirical evidence suggests a positive, first-order relationship between financial development and economic growth...There is even evidence that the level of financial development is a good predictor of future rates of economic growth, capital accumulation, and technological change.”* Additionally, the study framework may have identified three mechanisms of the research by which financial market development may encourage endogenous economic growth<sup>62</sup>. Firstly, financial markets could encourage a more efficient allocation of new investment-additions through to capital stock from less relatively to more relatively productive uses by financial intermediation between savers and entrepreneurial investors. Secondly, financial markets could encourage an increase in the rate of capital accumulation by providing increased incentives between saving and investment. Thirdly, financial markets could, in addition, improve productivity of capital by providing the necessary function of controlling and monitoring managerial actions. While this study has argued the degree to which the stock market influences real economic growth depends on how effectively it provides liquidity, information and monitoring function, risk sharing and pooling, it has extended a model of the Romer (1986), Lucas (1988), Rebelo (1991) and Pagano (1993) type of endogenous growth economy in order to achieve and incorporate the effect of stock market development.

Analyses indicate that the stock market has played a significant role in emerging markets. The relationship between most stock market development indicators and economic growth have been recognised as *robust*, even after controlling the economic variables associated with growth rate. The stock market size indicator as measured by the market capitalisation ratio enters positively and statistically correlated with real per-capita GDP growth rate. Another two liquidity indicators, value traded and turnover ratios, enter positively and statistically correlated with real per-capita GDP growth rate. It additionally emerged from this work that banking sector development indicators enter significantly in growth regressions. Besides emphasising that financial sector development in an emerging market is significant in its process of economic growth, this finding suggests that the bank-based performs different functions from those performed by the stock market-based. This is consistent with the view

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<sup>62</sup> Singh (1999:347) explained the stock market can promote economic growth through, “1- increasing savings and investments, 2- improving the productivity of investments and 3- raising the profitability of existing capital stock.”

that the stock market offers opportunities primarily for trading risk and boosting liquidity, whereas banks focus mainly on establishing long-term relationships with companies because they seek to acquire information about projects and managers in order to enhance corporate control. The result, in general, shows strong support for the model's theoretical prediction that stock market and banking sector development indicators have played significant and complimentary roles in the growth process.

Overall, this chapter's findings have significant policy implications for the Libyan economy and other emerging markets beyond a similar economic structure. Regarding policy implications, it is important that we draw some policy proposals based on the results of the best practice model found for emerging economies. For one thing, policies that support both banks and stock markets development are more favourable, rather than in favour of either banks or stock markets. Knowing the determinants of banks and stock markets development is an important next step for policy makers since higher financial markets development would facilitate economic growth in all countries, as shown by the extensive empirical literature. The results stress the importance of creating the conditions for an efficient provision of financial services. Efforts should be concentrated to promote well-developed banking sector and stock market as well as in identifying key conditions such as good quality of institutions. Realising several aspects of improving institutional quality for instance, enhancing rule of law and quality of financial regulation infrastructure, securing property right, reducing uncertainty, enhancing investors' confidence and playing a key role in the functioning of financial markets, is the key to both financial development and economic growth. It follows that an improvement of the performance of financial system in the Libyan stock market is crucial in order to stimulate growth through financial development. Evidence indicates that economic growth has a vital role in stock market development. Thus, it is significant for liberalisation and, in order to promote development of stock market indicators, Libya can increase economic growth via appropriate reform policy. To diversify the economy away from central control by government policy and to be successful, existing problems in all these areas need to be solved. In some instances that will require more private ownership, deregulation and reform of financial liberalisation. Key findings are stated in this chapter. Previous chapters will be summarised together with conclusions stating practical implications for reform policy, practice, research contribution, theory and future research in the next chapter.

## CHAPTER TEN

### CONCLUSIONS, CONTRIBUTION AND IMPLICATIONS

#### 10.1 INTRODUCTION

Essentially, this research proposed to provide a theoretical framework of an economic reform programme, macro-economic reform performance, financial maturity and stock market performance as a whole, as a step towards filling the gap in the theoretical background of researchers. In a bid to test aspects of this framework, and confronted by new developments, an empirical model was conducted to measure the extent of the economic reform programme and stock market performance practised by the Libyan economy. This chapter focuses upon the *summaries* and the findings, and *states* the conclusions of the objectives in terms of their contribution to existing research and their implications for academics and practitioners alike. The chapter is divided into six main sections. Section 10.2 presents the overview of the current research. Section 10.3 deals with key findings that emerge from the theoretical and empirical analysis undertaken. In section 10.4 the contribution to knowledge is addressed. Section 10.5 presents the implication policy and within Section 10.6 the potential limitations affecting the research are addressed. Finally, in Section 10.7, the outline for future research, building on the literature of the economic reform programme and stock market performance and the findings of this research, are suggested.

#### 10.2 OVERVIEW OF THE CURRENT RESEARCH

This research provides considerable knowledge about the relationship between the economic reform programme and stock market performance with special emphasis upon the developing country of Libya. Some of this knowledge might appropriately be generalised for other developing countries that have a similar economic structure. The general aim and specific objectives of this research were to provide a model that could be used to identify critical variables of an economic reform programme and stock market performance and apply this model to the Libyan context. Chapter One introduced the research, defined the problem and considered the aim and objectives of the research. The aim of this research is to determine the most appropriate model for the continued viability of a stock market development in Libya and to consider an appropriate strategy for the Central Bank of Libya to undertake the successful continuation of the stock market mechanism. To achieve this, the research objectives were formulated: firstly, to identify the success of the economic reform programme

in Libya, specifically the deregulation, corporatisation, privatisation and liberalisation that have led to the initiation of the Libyan stock exchange; secondly, to examine the relationship between macro-economic reform variables and stock market performance variables; thirdly, to assess the performance of market-based economies, with particular reference to the emerging economy of Libya, and to evaluate current and best practice in financial deregulation; finally, to determine whether best practice from other emerging stock markets is transferable to the Libyan situation and context. Theoretical, methodological and empirical studies were undertaken to provide the conceptual framework of the research model in order to achieve the research objectives. In addition, Chapters Three, Four and Five represent the theoretical part of the study, while Chapter Six discusses the methodological part. Chapters Seven, Eight and Nine represent the empirical data analysis, which is one of the major contributions of this study. Chapter Ten discusses the research summary, conclusions, contribution, implications and recommendations. The theoretical, methodological and empirical parts of this research are discussed subsequently.

### **10.2.1 The Theoretical Part of the Study**

The primary theoretical part of the study was to develop a model framework that could be used to identify the critical variables in developing countries, in Libya in particular. Chapter Two offers a comprehensive analysis of the macro environment of Libya and the performance and evolution of commencing financial sector development within its economy. Following the 1969 revolution, the economy witnessed three major systems: the nationalism and socialism period, an open door policy period and, latterly, the economic reform programme. The economy experienced rapid expansion during the 1970s and early 1980s as real GDP grew by more than 10 *per cent* on average. This expansion was mainly financed by oil sector revenue. In the mid-1980s economic growth slowed and the Libyan government started to experience reversionary trends. These later trends resulted from the collapse of oil prices and the Gulf War in 1990/1991. The Libyan economic reform programme was inaugurated during 1999 stemming from many factors such as: economic crisis in terms of oil price collapse by the mid-1980s and the early 1990s; the country's political isolation resulting from international UN sanctions following US Libya-specific trade sanctions in the early 1990s. By the end of the twentieth-century, after three decades or so of its leader's self-proclaimed revolution, Libya found itself at a significant connection. The country was able to emerge to enjoy its diplomatic reform and stave off its long economic crossroads. In addition, after economic sanctions were suspended in 1999, European and other foreign investors slowly returned to Libya as a central arena among North African nations.

The theoretical underpinning of this study is based on literature divided into three main chapters. Chapter Three presents a review of the relevant literature on economic reform programme. In Chapter Four theoretical aspects of economic growth theory are discussed. Emerging stock markets are illustrated in Chapter Five. Chapter Three offers an overview of how the economic reform programme has become a global phenomenon adopted by many developing countries in a transition economy in the last two decades such as Chile, China, Czech Republic, Egypt, Estonia, Hungary, Lithuania, Poland, Romania, Slovak Republic, Ukraine, Venezuela and Vietnam. Various classifications are used to define the economic reform programme, such as transition, transformation, economic adjustment, stabilisation and regime. In this research the expression “*economic reform programme*” and “*transition*” were considered in relation to the Libyan economy. It was argued that the key target of any economic reform programme represents the rate of economic growth and increase per-capita income in order to enhance the welfare of the economic society as a whole. However, the method which should be followed to implement such programmes was not determined and a comparison was made between the costs and benefits of a direct impact, which was the deciding factor in choosing between the two through experiments and learning from other regions which have implemented an economic reform programme. It could be argued that the South and East Asian regions with similar economies were the most successful when compared with other regions, with higher national savings, more investment and exports as the leading successes of these areas. In this context, Libya, with respect to IMF and World Bank advice, chose the gradualism method and to follow a gradual implementation of its programme in order to avoid any negative effects for its society.

Chapter Four provided the theoretical literature reviewing relevant good practice in order to identify a framework that links together the economic growth theory and the current theory on the function of the financial market and institutions was reviewed explicating developments made since Solow’s work (1956). A link between the financial market and an endogenous growth economic theory model is made by some authors such as Romer (1986), Lucase (1988) and Rebelo (1991), among others, in order to include the effect of stock market development. Bencivenga and Smith (1991) and King and Levine (1993) considered additional theoretical support for relationships between financial markets and the rate of economic growth. Bencivenga and Smith, in their model identified innovation as the mechanism of growth rate. King and Levine (1993) and Levine and Zervos (1995) believed that capital accumulation is an important conduit. Other studies, however, by Rajan and Zingales (1996) and Jayaratne and Straahan (1996) did not support this view. Deidda (2006) argued that the relationship between

financial development and economic growth is generally weak or has insignificant correlation at low levels of per-capita income. This stems from the result of the cross-section analyses by Deidda and Fattouh (2002) and Harris (1997) or the negative outcome resulting from the studies of Xu (2000). The birth of the *new endogenous growth theory* has facilitated the development of improved growth models where the long-term rate could be affected by a number of elements. These included technology, education and health policies in the process of economic development, capital accumulation, government policies and institutional activities in the role of financial development in economic growth. During the development of the *endogenous growth theory*, information was gained from literature and research how the reform of economics on long-term growth rate related to the macro-economic and financial institution performance. This framework has been reviewed by Stiglitz et al. (2001), Dabrowski et al. (2001) and Currie (2003) besides resources from the World Bank and IMF. Other works have revised financial institutions: Levine (1997) and Tsuru (2000).

Chapter Five has laid out evidence from theoretical and empirical studies, of how the stock market has played a significant role within both the advanced economy and the emerging market. Most empirical studies deal with emerging stock markets in diverse regions of the world. The South and Eastern-Asia countries, for instance, could be considered as foremost emerging stock markets compared with other emerging markets, such as the Sub-Saharan African countries, which can be regarded as occupying the last position within that market, and whether these markets can provide potential investors with the opportunity to invest. Furthermore, Chapter Five deals with various aspects of empirical studies which examine the relationship between economic and stock market performance indicators. This empirical study proposed that an economic reform programme, in terms of deregulation, privatisation and liberalisation, has a positive significant effect upon stock market performance which increases market size, market liquidity, market activity and market concentration. Additionally, empirical studies illustrated that there is a positive relationship between macro-economics in connection with per-capita income and GDP growth and stock market performance with impact of changes in exchange rates on stock prices and returns which differ from one economy to another and from one industrial economy to another. However, the empirical studies revealed that there is a negative relationship between other macro-economics *vis a vis* interest rates, inflation rates and budget deficit on stock market performances related to stock prices and returns.



### 10.2.2 The Methodological and Methodical Part of the Study

The main methodological and methodical part of the study, Chapter Six, discusses the selected research methodology. This is briefly justified along with the methods of data collection and analysis applied when undertaking this research. In order to achieve the research aim, clear objectives were formulated and, in light of these, the main methodological approach has been detailed. In doing this, various methodologies available for researchers were discussed and justifications for employing the positivistic paradigm were also given. Since economic reform and stock market performance literature has enabled the researcher to define a theoretical framework and develop hypotheses, the deductive approach was selected. The study utilised secondary and primary data and combined quantitative and qualitative methods. The multi-methods approach was used to achieve different research purposes, and to enable triangulation to occur. The questionnaires were designed and distributed to the entire target population within the Libyan stock market, and other financial sector organisations, while the researcher attempted to explore the nature and origin of respondents' viewpoints, in semi-structured face-to-face interviews including the sample, the sample population, the sampling frame, the sampling size and the translation of the questionnaire. Finally, the chapter concludes with an explanation of the statistical methods framework model adopted for this research. A variety of descriptive statistical analyses, differences, correlation statistics and regression analysis techniques were applied after due consideration of the assumptions of each.

### 10.2.3 The Empirical Part of the Study

The aim of the empirical part of the study is to provide a better understanding of relationships between economic reform programmes, macro-economic reform performance, financial maturity and stock market performances. Self-administered questionnaire and semi-structured interviews were used as the key method of data collection. Data obtained from the self-administered questionnaires is used in describing and exploring the correlation between the economic reform programme and the stock market performance. Data derived from semi-structured interviews is utilised to explore and explain the themes that have emerged from using self-administered questionnaires. The statistical package for social sciences (*SPSS 2003*) was used in this research. Spearman's rank correlation test was employed to test general research objectives and hypotheses. The direction of the correlation coefficient ( $r$ ) can be examined to establish whether it is positive or negative. A positive correlation indicates that there is a positive effect of economic reform programme and stock market performance. If the result of the correlation coefficient  $r$  is zero, then this indicates that there is no relationship

between variables. The linear regression analyses model examined were used to test the relationship between variable models in order to ascertain whether they are relevant for explaining and identifying the economic reform programme and stock market performance in the Libyan context. Consequently, there is a need to conduct stock market research by using different types of data sources. This is because regression analysis of the final Libyan data only answers some of the objectives of this research and is also due to the problem of unavailability of *hard* data collection. The transferable model was tested related to the relationship between stock market development, and economic growth was tested by using various specifications of an empirical model extended from a simple endogenous growth theory, where the stock market is assumed to effect economic growth via increasing capital accumulation mobilising capital to its efficient use and improving total factor productivity growth in an economy. To control the endogenous determination of stock market development (a subset of the stock market development may not be exogenous) all regressions were run using the two stage least-squares technique.

Chapter Seven examined the critical factors influencing the economic reform programme, macro-economic reform, financial maturity and stock market performance in the Libyan economy and financial sector according to their characteristics. The findings in this chapter have a significant policy reform implication for Libya and other developing countries with similar economic structure and growth. The evidence indicates that economic reform programmes, macro-economic reform and financial maturity play a significant role in the stock market performance development of the Libyan economy. Thus, it is significant to liberalise the economy, mobilising savings and increasing the ratio of investment to GDP when considering the economic reform programme in order to promote better development of the stock market performance. Libya, however, can encourage the economic growth rate by means of an appropriate policy reform programme. The findings suggest that stock market size, as measured by the value of the listed share divided by the GDP, is considered the significant indicating factor. The total value of traded ratio measures the organised trading of a firm's equity as a share of national output and, therefore, is considered as the most significant positive factor related to the liquidity market. To this end, the increased numbers of traded companies increases market activity in the stock market, followed by the market concentration that concerns respondents, where the percentage of the largest companies affects value traded in the stock market.

Chapter Eight dealt with the empirical work of the regression analysis model of this research, preliminary with the dataset, research hypotheses and methods. Findings related to the

research's objectives have been *presented* and *analysed*. The subsequent chapter presents the results from the regression *analysis* technique *models* for developing the Libyan stock market, *empirically* examining the research *hypothesis* using data collected by the questionnaire survey that may not be tested by utilising financial statements' data. The *hypotheses* examine the independent variables of economic reform programme, macro-economic reform and financial maturity in terms of dependent variables of stock market performance. The research framework model is presented in Section 6.6 in Chapter Six and tested in Chapter Seven. The measurement regression analysis model was conducted with the *SPSS 2003* software package. Data was screened to check for data input errors, distribution, normality, multicollinearity and outliers. Findings relating to the significant or non-significant relationship between the independent and dependent variables under study, with acceptance or rejection of each hypothesis, were discussed and summarised in Tables 8.10, 8.21 and 8.29.

Chapter Nine attempted to provide a better understanding of the transferable model of a financial market between Libya and other emerging markets. The evidence presented in this chapter challenges some economists' belief that stock market development is not significant in the growth process of nations, especially for developing countries, since other financial intermediaries can provide a relationship between stock market development and economic growth. This has a significant implication; it provides a high degree of confidence that stock market development is an effective policy for promoting the emerging market economic growth. This chapter's findings have significant policy implications for the Libyan economy and other emerging markets beyond a similar economic structure. The evidence indicates that economic growth plays an important role in stock market development. Thus, it is significant for liberalisation and, in order to promote the development of the stock market indicators, Libya can engorge economic growth by means of the appropriate reform policy. In an attempt to diversify the economy away from central control by government policy and to be successful, the existing problems in all these areas should be solved. In some cases this will require more private ownership, deregulation and reform of financial liberalisation.

### 10.3 THE KEY FINDINGS

Based on the literature review and theoretical and empirical analysis, several key findings emerged. These are summarised and discussed throughout the research. However, to capture the major results might be of interest for both economic reform programme and stock market performance in developing countries that have a similar economic structure. The next four subsections of this chapter present a summary of the main findings.

### **10.3.1 The Relationship between Economic Reform Programme and Stock Market Performance**

#### ***The Results of Descriptive Statistics***

The questionnaires have several implications for economic reform and developing stock market performance. The economic reform programme was measured by deregulation, corporatisation, privatisation and liberalisation stability. Libyan respondents indicated that the deregulation of the economy was the most influential factor affecting the economic reform programme which encourages companies to invest in the stock market. A manager of corporate companies playing a crucial role in encouraging prospective customers to invest in the market-based economy is considered to be a significant source of corporatisation. The private sector can co-operate with stock market authorities to increase competitive advantages of the most important factors in a privatisation reform programme. The private sector, as has been previously mentioned, consists of the service, industrial and agricultural sectors. The contribution of the companies within the service and industrial sector to GDP is 43.5 *per cent* and their contribution to the labour force is 37 *per cent*. Liberalisation, consequently, may affect specific components of capital flows including debt (financial and non-financial borrowing, and lending), equity (portfolio), investment (stock markets) and foreign direct investment. Liberalisation of the economy ensued with Libya joining the WTO membership during 2001 and via free trade agreements, which helped the country's competitive economic development to encourage foreign investment and provide consumers with superior quality goods and lower prices across a wide range of products.

An economic reform programme is, nevertheless, conducted along with other recommended reform. Therefore, financial policy fulfilling legal requirements regarding the capital is considered as the most critical factor indicated by respondents. Firms' decisions regarding the issue of shares were the most significant to maintain an increase in market share to satisfy the prospective customer. Adding strength to the company's reputation is considered as an unimportant aspect of a firm's decisions even among private companies.

#### ***The Results of Hypotheses Testing***

The most significant part in this subsection is the modelling analysis hypotheses of the impact of economic reform programme variables upon stock market performance variables by using multiple regression analysis models. To examine the relationship between the economic reform programme and stock market performance, the theoretical work (as mentioned earlier

in the literature review) of Fisher and Gelp (1991), Clague and Rausser (1993), Williamson (1994, 2004), Bgcolor (1996), Fisher et al. (1996) and King (2003) was followed by the empirical study Cho (1986), Zingales (1998), Demirgüç-Kunt et al. (2004) Baltagi et al. (2006), among others, to observe four economic reform programme indicators: deregulation, corporatisation, privatisation and liberalisation. For the economic reform programme empirical findings, however, the result supported the hypothesis that there is a significant positive relationship between economic reform programme variables which cannot reject the hypotheses. It is useful to mention that this result tends to be consistent with stock market behaviour in the Libyan economy after introducing the economic reform programme, as indicated in the literature review. Thus, the impact of each independent economic reform programme variable upon stock market performance variables tends to follow the same direction found in the previous literature review.

### **10.3.2 The Relationship between Macro-economic Reform and Stock Market Performance**

#### ***The Results of Descriptive Statistics***

In the context of the current research, Libyan macro-economic reform in general, and the economic reform programme in particular, have been designed to increase investment and to strengthen the economy. Macro-economic reform was measured by interest rates, exchange rates, inflation rates, budget deficit, per-capita income and real GDP growth rate in the Libyan economy. The responses further indicated that interest rates affect the stock market, followed by liberalisation of the interest rate that the exchange rate may alter investment in the local currency market compared with other markets, is considered to be a significant factor of macro-economic reform. Most respondents felt that this was a desirable step to please the macro-economic reform variables, as any increase in inflation rate reduces the expected real returns to investors from holding stocks, followed by when inflation increases the price of goods and services increase. The responses additionally indicate that budget deficit is considered to be the excess of government expenditure over time, as the respondents indicated that per-capita income is one of the driving forces towards a stock market, followed by the impact of oil prices upon GDP and the stock market.

***The Results of Hypotheses Testing***

This part featured the modelling of the macro-economic reform variables upon stock market performance variables by using the regression analysis model. Testing the relationship between the macro-economic reform and stock market performance followed work by Ajie and Jovanovic (1993), Boundoukh and Richardson (1993), Levine and Zervos (1995), Harris (1997), Fama and French (1989), Levine and Zervos (1996), Levine (1997), Beck et al. (1999a), Levine et al. (2000), Kasman (2003), Omran (2004), and Bolbol and Omran (2005). The overall results indicated that the impact of each independent macro-economic reform variable upon stock market performance variables tends to follow the same direction found in the empirical study in line with the literature review, except for interest rates and inflation rate hypotheses. The interest rates and inflation rate, however, had significant negative relationship with stock market performance, which cannot accept the hypotheses. Also, the results illustrate exchange rate and budget deficit which stated that stock market performance increases as both exchange rate stability increase and budget deficit decrease can either accept or reject the hypotheses, as the exchange rate and budget deficit affected the majority of the stock market performance area. Ultimately, the results supported the hypotheses which stated that the Libyan government should pay greater attention to developing its stock market with success in implementing its macro-economic reform performance as the result does not lend strong support to the hypotheses that there is a fundamental relationship between macro-economic reform and stock market performance variables.

**10.3.3 The Relationship between Financial Maturity and Stock Market Performance*****The Results of Descriptive Statistics***

Three ratios were used to measure financial maturity: banking assets ratio, the ratio of domestic credit to GDP and the ratio of market capitalisation to GDP. Analyses of the results of the critical variables of financial maturity were the ratio of banking assets to GDP that concern respondents as the most critical factors. Domestic credit of GDP was additionally considered as one of the measurements of financial maturity of stock market systems, followed by stock market enlargement as measured by market capitalisation relative to GDP. Responses also highlight the most important factors of a bank-based system or market-based system to be better growth for the long-term. In a bank-based system, mobilising savings, regulatory structure, justifying the problems associated with excessively powerful banks and structure activity are held to be the most important factors within a market-based system

identifying sound investment, allocating capital, increasing transparency and accountability and finance activity as being paramount considerations.

### ***The Results of Hypotheses Testing***

In this part of testing the hypotheses model, use was made of two indicators of the banking sector in terms of financial maturity variables that have been used recently following the work by Beck et al. (1999a) and Levine et al. (2000). This involves the rate of total bank assets to GDP, which provides evidence of the significant services performance by the banking sector related to the size of economy, whilst the second indicator used the value of credit given by the banking sector to the ratio of domestic credit divided by GDP. The third indicator used ratio of market capitalisation divided by GDP as measured by the stock market performance development, following studies by King and Levine (1993), Levine and Zervos (1996), Levine (1997), Beck et al. (1999a) and Levine et al. (2000). It was argued that the stock market is no better than banks in motivating an economic growth rate. Both banks and the stock markets work together to influence economic growth. The results support findings by Levine and Zervos (1996), Levine (2004) and the argument by Kunt (1994) and Samuel (1996) amongst others, that there is a strong relationship between the stock market and the rate of economic growth. Indication of the size of the banking system using the total bank sector assets divided by GDP ratio, with another indicator of domestic credit from the banking sector divided by GDP ratio, found that the stock market continues to remain positively and significantly correlated with total bank assets and stock market capitalisation ratio divided by GDP, which cannot reject the hypotheses. Nonetheless, the result does not lend strong support to the hypothesis that there is a crucial link between the stock market and domestic credit divided by GDP ratio. This result has a significant suggestion. It confirms that stock market performance represents a different set of functions not entirely provided by banks. The empirical finding bears a significant policy implication; it argues that the Libyan government should not necessarily abandon the development of one component of the financial sector. Despite the stock market performance and the banking sector playing complementary roles in promoting economic growth rate, the sector should be developed in tandem.

### **10.3.4 Comparison between Emerging Countries and the Libyan Stock Market**

#### ***The Results of Descriptive Statistics***

Respondents indicated that the most significant lessons learned emanated from other MENA nations followed by those of Central and East European countries, Far Eastern countries and

Latin American nations. The Libyan stock market establishment is very recent in comparison with those of most countries. However, the Libyan stock market should have been able to examine similar experiments in other countries, for instance by assessing the strength and weakness of stock markets in MENA countries.

### ***The Results of Hypotheses Testing***

The analysis in Chapter Eight offered comprehensive evidence on the strength of the relation between the stock market development and economic growth in emerging market countries. The findings from the estimation of basic regression, which consisted of per-capita real GDP growth as dependent variable and the labour, capital and stock market development as independent variables, showed that stock market capitalisation is a statistically significant correlated with per-capita real GDP growth. A one-percentage point increase in the growth rate of market capitalisation to GDP is associated with a 0.420 percentage point increase in per-capita real GDP growth. This result is highly consistent with the theoretical view that the ability of the stock market to mobilise capital and risk sharing is intimately associated with economic growth. This appreciated result, however, is inconsistent with previous studies which failed to establish a relationship between stock market capitalisation and economic growth. It was also found that, when the banking sector development indicator was added to the basic model, measured as the total assets of the banking sector divided by GDP and the regression was re-run, then the stock market capitalisation coefficient remained positively and statistically correlated with per-capita real GDP growth. The banking sector development variable, on the other hand, enters positively but insignificantly. The findings merely suggest that there is an exogenous component of stock market development that positively influences per-capita real GDP growth.

Overall, empirical results supported the hypotheses in these findings and, hence, confirmed that the significance of stock market performance in the development process of the Libya has been affected. These findings might appropriately be generalised to other developing or emerging economies that have similar economic and financial structure. Thus, when applied to the important role to developing countries that have similar economic structure to the Libyan economy, it could be beneficial for their financial market to liberalise and mobilise a higher amount of national savings. Thus, it was also confirmed that improving and developing investment raises the efficiency of investment, increases output and, consequently, develops the economic growth rate.



## 10.4 CONTRIBUTION TO KNOWLEDGE

This study seeks to make an original contribution to knowledge by investigating the impact of an economic reform programme on the stock market performance in an emerging economy. These contributions have combined to construct an applied study of a type that does not appear elsewhere, and the framework offered is, therefore, not only appropriate to Libya as a case study, but also to other countries in similar circumstances such as Algeria, Bahrain, Brazil, Chile, Czech republic, Egypt, Iran, Kuwait, Mexico, Qatar, Saudi Arabia, Syrian, United Arab Emirates, Venezuela and many other countries. The research provides an important introduction to this area and has attempted to explore its significance for the economy and business. A critical review of this research has added to the existing body of literature and assists the researcher in obtaining new ideas and perspectives, exploring the significant variables regarding development and in the application of a series of research models of economic reform and stock market performance related to economic growth in the following areas.

### 10.4.1 Theoretically

1. This is one of the first studies of its type in this critical area. It has explored many new ideas by targeting a large population, undertaking a statistically detailed data analysis and interpreting and justifying the study results and evidence which could be considered as directions for future research.
2. The literature was discussed, summarised, categorised and analysed using a methodical and comprehensive technique; the results provided are in a database which includes not only details of the articles such as title, author, and date, but also abstracts of published academic articles in the research. It is hoped that this resource will, additionally, be made widely available by publication, probably as some kind of web-based resource, similar to that of the University of Connecticut economics database, <http://ideas.repec.org/f/pma467.html>, yet be more extensive, comprehensive and up-to-date. The contribution of this piece of the study extends beyond the descriptive by measuring aspects of the literature and offering suggestions for improving the quality of empirical work investigated and/or undertaken in the area of economic reform and stock market performance.
3. Libya is still in the incipient stages of its financial liberalisation and reform, but it is moving quickly as a result of the removal of UN and US sanctions within the last two years, and there are signs of rapid development. However, hitherto, there has been no

study to explore the readiness of the Libyan financial market for stock market performance, although this would seem to be an inevitable outcome.

4. The Libyan stock market, in the long-term, will benefit from increasing economic growth. It will determine the impact of the economic reform programme and whether financial theories, concepts and practices have been influenced by environmental factors (cultural, economic, political, and social), as in many other MENA countries.
5. It is hoped that such contributions will be beneficial, both academically and professionally. Academically, this research aims to focus attention upon a neglected area in the context of this research. Professionally, managers will further seek out the practical implications offered by this research in their actual relationships with their stock market performance.
6. The study contributes to the existing limited studies on economic reform programmes and stock market performance conducted on the developing nation of Libya and within the emerging economies in general.
7. The review of literature in this research has revealed gaps and provides a case for more empirical studies to be conducted, where future research integrates, refines, extends the empirical work conducted in this study and fills some of the gaps in this research's literature.
8. This study could be considered as a step towards raising and improving the comprehension of current practices and management of economic reform programmes and stock market performance in the Libyan context and fill any gaps of the literature in other developing countries.

#### **10.4.2 Empirically**

1. Few empirical studies have been conducted that contribute to the understanding of the relationship between economic reform programmes and stock market performance of specific developing countries in both the quantitative and qualitative approach to explore their relationship, where previous research efforts have not been made to investigate such relationships.
2. This study was the first of its kind to explicitly investigate the direction of causality (developed model chosen) between Libya and other emerging economies and, hopefully,

will prompt others into replicating the study in other contexts, that is to say, applying the model to other emerging economies.

3. Stock market performance was tested as a dependent variable where other variables, in terms of economic reform programmes, macro-economic reform and financial maturity were tested as independent. Stock markets may develop in the anticipation of the financial needs of banking and industries or companies. Factors, such as quality of the deregulation system, quality of goods and services, transparency and internal information problems, modern technologies, taxation issues, capital investment, accounting standards, financial disclosure, liberalisation of restrictions on international flows, macro-economic environments, direct foreign investment, saving investment, the development of both banking sector and non-banking financial institutions (i.e. insurance companies, pension funds, mutual funds and investment banks), are significant considerations to be eliminated for the development of stock market performance.
4. This study provides recommended solutions for stock market problems through suggested effective economic reform programmes to enhance market-based financial systems where the influence of Arab culture on a stock market would be minimised or improved.

#### **10.4.3 Methodologically**

1. This study is the first of its kind to offer a critical research by providing analysis of data that will evaluate the success of the economic reform programme and Libya's readiness to complete its transition to a market-based economy. As a consequence, the Libyan experience could provide new insights into the debate of the effectiveness of stock market performance and the underlying conditions for its success.
2. Libya has some similar characteristics to other developing countries that have also established their own stock exchanges by the end of 2000 (UAE: Abu Dhabi Stock Exchange and Dubai Financial Market). A number of other nations only established stock markets very recently, for instance during 2005-2006 (Comoros, Djibouti, Mauritania, Somalia, Syria and Yemen) and this study will make two contributions in this respect. Firstly, the methodology used in this thesis (statistical measurement of economic variables and qualitative analysis of the progress of other like countries) can offer a method for these countries to follow. Secondly, the questionnaire developed as one of the research methods will be available for researchers to adopt with the need to make only slight variations to reflect national situations.

3. This research provided a combination of various methods of data collection and analysis testing in the financial and banking sectors of the Libyan economy which was considered to be richer in theoretical models. The richness of the data collected reflected the advantage of adopting the case study method in conducting the research.
4. Due to the lack of high-quality published databases, this research has embarked on a significant development of the application of data collection (questionnaire survey and semi-restructured interviews) of the economic reform programme and stock market performance in the developing country of Libya. The critical review and findings can, accordingly, be of great assistance to researchers and policy-makers alike.

Ultimately, this study contributed to the limited studies on economic reform programmes and stock market performance in developing countries in general. In either case, this study contributes to the significant lessons learnt. Experience is related to the doctoral research fulfilling the important aspect of making informed choices and decisions, in that alternative possible courses of action undertaken, investigated and evaluated comprehensiveness, focusing on the main issues addressed by research and looking to fulfil them. This is what finally delivers the research, before committing to a particular path, method, or technique. This is because any decision-making might influence the subsequent course of events and, possibly, impinge on the final outcome. Hopefully, the outcomes emerging from any study are necessarily shaped and influenced by the nature of the study's design.

### **10.5 THE IMPLICATION OF THE STUDY FOR POLICY REFORM**

Based on the information obtained in the existing literature and the empirical findings, as the situation is developing in Libya, the following significant implications can be made to the Libyan financial and business policy reforms' context. This could be transformed, so that Libyans are able to be more open about sensitive issues and constraints which may help introduce and manage strategic shift towards genuine economic reform and stock market performance. In this respect, there still remain outstanding critical issues that address a challenge which should encourage the activities of the stock market performance in the Libyan economy and social wellbeing. Therefore, without careful planning and management, problems will occur and they will be serious. Overall, the Libyan government should aim to achieve the adoption of appropriate plans and strategies which are required for the development of this area.

1. Some Arab nations (Bahrain, Kuwait, Qatar, and Saudi Arabia, United Arab Emirates) have huge oil wealth and a small population, whilst others (Egypt, Morocco, Sudan, Syrian and Tunisia) are poor with an enormous population. Libya lies between these extremes and, as such, “*must create*” its own model. Given its available resources, it should increase its wealth still further and “*catch up*” with the income levels of the most developing nations in the world (refer to 3.6.5).
2. In order to ensure long-term development of stock market performance and to solve the current problems, it is essential to have management planning that explores the positive and negative effects of financial institutions, including the companies, on the environment of economic reform and deregulation policy (refer to K.4.2 and K.3.4.2).
3. Promoting independence and transparency of the Libyan government should create trust in the credibility of the country’s deregulation. These will remain the key issues in influencing investors’ perceptions of transfer risk (refer to 7.4.1.1).
4. It was evident from analysis that stock market development influences policy framework, thus encouraging Libya’s economic growth rate. By implanting the measurement of stock market performance, the Libyan government may be successful in establishing a strategy that enhances the role of stock market development in the process of the rate of economic growth but which should promote the activities of stock market performance in a globally competitive arena (refer to K.3.2.1).
5. There is reasonable confidence that a politically stable system is making progress on social indicators in the region which can attract foreign capital inflows to realise greater comprehension nationally. This could create the appropriate environment for economic activities and various social groups in Libya to act out their full roles (refer to K.3.4.3).
6. Increased awareness and knowledge of the successful implementation of privatisation and liberalisation programmes and putting key deregulation governing taxation in place in order to produce significant direct and indirect benefits for stock market development should be effected. This would engender a significant alteration in the government’s mode and control towards ownership of national assets (refer to 7.4.1.2 and 7.4.1.3).
7. The findings of this study demonstrate that the stock market will perform a significant role in the long-term, relating to Libyan economic growth by increasing the rate of GDP, promoting the national economic reform programmes, providing that modern

technologies are introduced to develop the production and support other reform programmes to proceed faster (refer to 7.4.2.6 and K.4.1). This may provide some explanation for the expressed intent of Saif al-Islam, the son of President Al-Qaddafi that:

*“the old times are finished and Libya is ready to move onto a new stage of modernisation [...] which will be conducted in a well organised manner that ensures new ownership and ownership by the people of Libya, not just a small class of oligarchs like Russia and Egypt ...”* Vandewalle (2006: 189).

8. The findings of this study also show that the stock market will play a significant role in the long-term relating to Libyan financial institutions and companies. Thus, it might provide the opportunity to acquire finance from investors and provide potential investors with new investment opportunities to increase their portfolio in order to restore desired levels of liquidity (refer to 7.4.4.2).
9. The Libyan stock market is expected to implement changes: financial market reform; raising individual income levels; controlling circulation of financial market transitions; new foreign investors to invest in securities; investment policy reform; building on previous measures such as passing of new deregulation pertaining to the dealing of securities; providing the realistic competition between national ownership companies; improving the level of financial disclosure within companies (refer to 9.7 and K.4.2).
10. Libya's macro-economy provides a positive context for reform efforts, significantly better than prior to the early 1990s, when Libya required liberalisation of the economy. The latter should create much-needed new job opportunities in the private sector and result in a reduction in unemployment rates. To achieve this, Libya needs to build a physical infrastructure of ports and roads; a telecommunication networks and administrative infrastructure are also required to improve the country's position are greater as knowledge and skills levels to prepare its indigenous workforce to work in the financial markets and to alter the prevailing approach (refer to 7.4.1.4 and 7.4.2.5).
11. Libya needs to develop and promote the establishment of specialised financial institution intermediaries such as pension funds, mutual funds, credit unions, savings and loan associations and insurance companies. These will all play a very significant role in increasing depth and liquidity in the stock market and market deregulation, especially *vis a vis* protection of minority shareholders' rights, besides protection of insider information. The development of specialised financial institutions can additionally extend

the development of shares and the level of professional fund management in order to increase market capitalisation and the value traded both relative to GDP ratio (refer to 7.4.3.2 and 7.4.3.3).

12. Libya's banking system has a significant role to play in the development of the stock market. This derives from its role as an intermediary between the business sector and investors. Investment banks are most needed, which might be developed either from within or through the existing commercial banking system to provide brokerage services, financial analysis, fund management, portfolio, trading and underwriting of share issues at their own risk. A similar consideration should also be given to the role of banks as market makers, in order to adopt positions and create markets by buying and selling shares (refer to 2.4.1 and K.3.2.3).
13. Restructuring monetary policy should include a new role for the Central Bank of Libya and its functions in order to reduce inflation rates and restore the credibility and reliability of Libyan economic growth rates. The proper application of these policy mechanisms and methods consistent with the privacy of the Libyan economy will render it possible to achieve the goals of economic stability and economic growth, rationalise public expenditure and increase efficiency and productivity of non-oil economic sectors (refer to 2.4.2 and 7.4.2.1 ).
14. The corporation of small and medium enterprises within the privatisation programme in Libya is designed to promote small businesses, and young people in particular, by offering them public funding and government support. Improvement of the economic environment that supports the work description and performance measurement of the stock market should ensue. Listing of large privatised companies leads to a significant increase in market capitalisation; it additionally provides a substantial influence on trading liquidity in stock market performance. Listing new companies due to privatisation sales reduces the non-systematic risk of equity portfolio and increases investment opportunities for local investors to increase their portfolios (refer to 7.4.1.2).
15. Organising and developing Libyan cooperation with the outside world requires more diligent effort. Motivation of companies to improve the investment climate, organise tax-offices to impose and collect taxes and rates and enhance access to the issues of corporate government, are areas of advice recommended to Libya by the investment programme of the Organisation for Economic Cooperation and Development (OECD) (refer to K.3.4.2).

16. Corruption remains in various forms, whether political, administrative, legal or economic. This is one of the most serious problems facing the development of economic, political and social arenas in Libya, as indeed elsewhere. Countenance remains one of the most significant functions of the government, so as not to bring a well-established culture of working to undermine statehood and tearing apart the social fabric of society to thrive and flourish. Such a result will only come through an evident desire for change and a comprehensive vision of reform, strengthening the institutional capacity of the governance and, the transparency of policies, procedures and fairness (refer to 9.6 and K.3.2.3).
17. Libya does not need local investment to provide liquidity, but there is a requirement to develop its energy industry, particularly the oil and gas companies, which suffered greatly under US and UN economic sanctions. The new website, [www.investinlibya.com](http://www.investinlibya.com), targets the promotion of foreign investment in industry, education, health care, agriculture and services, and will keep investors informed via new deregulation of the Libyan Foreign Investment Board. The economic reform programme, which began in 1999, has already witnessed new policies beginning to bear fruit, including restructuring banking rules and bureaucracy to build on previous measures such as passing new deregulation on foreign investment in 1997 and restructuring the real market which dates back to the late 1980s (refer to 2.3.4 and K.3.3.1).
18. Learning from some of the successful experiences in other developing countries regarding the role of the stock market performance in the economic reform programme is essential. As presented by the experience of emerging economies such as Chile, China, Egypt, India, Malaysia, Qatar, Singapore and United Arab Emirates, approaches to enterprise reform and ownership change might be appropriate models to follow. Conducting deregulation, corporatisation, privatisation and liberalisation programmes through the financial market may produce significant direct and indirect benefit for developing stock market performance (refer to 3.6 and K.3.4.6).

In the case of Libya, as illustrated by the research findings, the government should make efforts to promote the successful creation and implementation of economic reform, macro-economic reform performance, financial maturity system and stock market performance. This can only occur with the mobilisation of the full range of human, capital and physical resources, since these are required to develop the particular area of economic policy and financial market on offer, to organise its marketing, control the sector and ensure its



integration into the global economy. Foreign, private sector undertakings will be the exception rather than the rule. Liberalising the civil society of deregulation that avoids freedom of association and liberalising media and encouragement of economic reform programme agenda. All of this will enable them to contribute to the control of public and private institutions and follow-up their activities and allow the detection of corruption. Nevertheless, some of the reforms will be problematic and there will certainly be resistance to change among some quarters. Libya, however, should reform if it is to complete its vision. The Basic People's Congress would need to play a critical role in reaching decisions as to which reforms should be embraced. Leadership will be needed from committed individuals who have the ability, ideas and courage to carry through the reform agenda and policy decisions. They will require support and resources from government to succeed in implementing reforms. Consequently, the government will need to ensure the results of the change programme and update the reform agenda on an annual basis, as its aims are successively achieved and new objectives arise.

## **10.6 LIMITATIONS OF THE RESEARCH**

The research has successfully achieved its objectives and answered its questions to explore and study the economic reform programme and stock market performance in developing countries. Although almost all research has limitations, these might be explored in future studies based on the scope of the research. Keeping in mind the following limitations, this study should merely be perceived as a contribution to continue the economic reform programme and stock market performance in emerging economy research process in Libya and not as an end in itself. The limitation of this research can be achieved and discussed threefold: theoretically; empirically; methodologically.

### **10.6.1 Theoretically**

- The major complexity with this research is that no studies have been previously performed regarding the implementation of economic reform programme influencing the stock market performance in the Libyan context. This would add to the originality and value of this research, as this research will not have the added benefit of learning from others' mistakes.
- There was a lack of literature concerning the economic reform programme and stock market performance in Libya in particular, and other MENA nations in general. Most of the available literature was related to developing countries including Eastern Europe, Latin America and developed countries for example, UK and US.

### 10.6.2 Empirically

- There were some problems with the distribution of the research questionnaire; the same method could not be adopted for all Libyan financial institutions and companies. Some respondents, for instance, refused to accept the questionnaire survey; they believed that the financial market is unethical, because they saw the stock markets as a form of gambling and in conflict with Sharia law. Others accepted the survey and volunteered to distribute it to the research sample, while others allowed the researcher to deliver the survey to the research respondents individually. This might have created inconsistency in the data collection process.
- There was a scarcity of empirical work previously conducted in the research area. This meant a lack of scales and measurements that could be used in order to establish a cause and influence study to examine the relationship between economic reform programme and stock market performance. Additionally, most of the available studies revealed contentious findings that do not encourage future research, as hitherto mentioned.

### 10.6.3 Methodologically

- The data collection obtained from the questionnaires' survey suggested the use of non-parametric technical statistics. Thus, according to Field (2005), these were applied as "*less powerful*" than their parametric counterparts in that, if there is a significant effect in data analysis, a parametric test is more likely to detect it than a non-parametric one. By design, the non-parametric is a distribution-free test; it does not require the average score of each variable, as is the case in its parametric complement. Such a methodology confirms the ordinal scale statistical treatment due to the non-parametric test solely ordering or ranking responses in a certain way. There is, though, an increased chance of a Type II error, sometimes referred to as Beta (B), which involves the opposite occurring (i.e. accepting the null hypothesis when the alternate hypothesis is true) (see Chapter Six, Subsection 6.10.1.2.1.4). Furthermore, and unlike regression tests, this type of test is unable to provide an including of causality between variables. Employing non-parametric statistics with valid assumptions is methodologically "*safer*" than employing "*robust*" statistics with invalid or violated assumptions (Hollander and Wolfe, 1999). The "*robustness*" of using particular statistics lies in whether or not a statistics assumption is connected; if so, the statistic yields generally valid results (Leedy and Ormrod, 2005).

Regardless of the fact that it is recognised that this study has some inherent limitations, it is believed that the findings and adopted methodology of this study might form the basis for future research.

## **10.7 OUTLINE FOR FUTURE RESEARCH**

This thesis has been intended throughout as a comprehensive study of the Libyan economic reform programme and its implication upon the country's economy and stock market performance. It is, therefore, important to determine where the field study finds Libya apparent today and the trends that are emerging. The current research effort is in line with such a direction (see Appendix B, Figure 2: The Structure of Research Framework Model). Whilst this study has significantly contributed research to the understanding of the growing empirical literature in developing countries, much still needs to be done as the research cannot cover the entire economic reform programme or stock market variables. With this in view, possible guidance and a number of ideas are offered for future extensions to this study, which could be undertaken following the results and theoretical framework stated in this research. This is discussed, subsequently in a number of areas.

### **10.7.1 Research Analysis**

Future research could expand the analysis of this research to study other countries, extend the sample survey and examine the effects of other financial disclosure, financial intermediaries and the degree of openness to foreign portfolio. Other aspects for analysis would be to test various forms of the efficient market theory in the MENA countries, including Libya. Although, as more data becomes available in future, such material can be used for testing and identifying additional variables that could have influence on financial institutions and, therefore, more long-term research is needed in order to investigate the determinants of stock market performance over an extended period of time. Furthermore, study of the proposed model in other MENA countries could be performed in order to raise further explanation of the model and to reveal more generalised findings. In addition, comparison could be made with other MENA countries at different stages of development or between MENA economies and those of Sub-Saharan Africa. To this end, therefore, the recent liquidity crisis in world markets has had little impact on Libya due to the closed nature of its economy. As the situation changes over time and Libya's markets become more liberalised and international rather than internal-facing, further research would be needed to identify the impact additional liquidity crises may have within the nation's economy.

### **10.7.2 Economic Reform Programme**

As this research is one of the first to include such variables of economic reform programme, additional research is required in order to confirm the Libyan findings. Due attention should be paid to examine the relative significance of, and the relationships among, stock market performance, a measurement that has been underestimated by most of the previous research. A study of deregulation, corporatisation, privatisation and liberalisation stability is still required to test more fully how far Libyan stock performance has achieved success and effectiveness as a consequence of applying an economic reform programme.

### **10.7.3 Macro-economic Reform**

This study provides comprehensive empirical tests of macro- and micro-levels of relations with stock market performance. In this area more research is required.

- At macro-level, future research could measure the effect of stock market performance on capital accumulation, human capital, private savings rates and productivity growth. It additionally examined the foreign direct investment (FDI), which can be stated to be a significant variable to reveal its effect on the Libyan economy.
- At micro-level, future research could investigate the causal relationship between stock market and firms' investment rates, profitability ratio, technical changes and economic efficiency.

### **10.7.4 Financial Maturity**

There is a need for further studies that examine the relation between a banking-based system and a market-based system by using M2 divided by GDP ratio as a common indicator of bank development (depth of bank intermediation). To measure a bank's development, Rousseau and Wachtel (2000) use M3 divided by GDP ratio. King and Levine (1993a, 1993b) used the total liquid liabilities of financial intermediaries M3 divided by GDP ratio. In the near future researchers could undertake further studies on financial maturity in Libya's banking system as an example from a developing country.

### **10.7.5 Stock Market Performance**

- In this study there are other measures for stock market performance, such as volatility and stability measure. Further research could consider separate measures and tests for the

relationship between stock market performance and rate of economic growth. How changing those measures affects the rate of economic growth is an interesting topic for further research.

- Where all stock market performance variables are dependent could be a topic if examination of the interaction between these variables is conducted. Other independent variables in terms of economic reform programme, macro-economic reform and financial maturity may be used to evaluate the performance of individual companies upon a stock market.
- This study does not consider the effect of stock market liberalisation. Opening the stock market to foreign investment by raising demand for shares on the stock market increases liquidity and efficiency; this increases local investors' opportunities for portfolio diversification which, in turn, raises their motivation to invest in shares. It additionally increases liquidity, having an indirect effect the monitoring and control functions of stock markets. Furthermore, it should be expected that a more international integrated stock market has a potent effect on economic growth.

#### **10.7.6 Comparison between Emerging Countries and the Libyan Stock Market**

Chapter Nine analysed approaches adopted by some emerging countries in their moves towards establishing a framework for the positive impact of stock market performance. In this regard, the cases of emerging economies are observed, identifying similarities and differences across countries of different backgrounds. Examples of successful emerging markets are given, particularly between Libya and other emerging market countries. Including stock markets from other developed countries (such as Australia, Finland, France, Germany, Greece, Japan, Luxembourg, Singapore, Spain, UK and US) may have provided a wider and/or different understanding of other model practices in the Libyan context. Access, time and cost constraints and the sheer amount of work involved prevented the researcher from expanding the research setting.

On the whole, much remains to be learned about the relationship between economic reform programmes and stock market performance. This research represents a novel approach since it addresses four key aspects (economic reform programme, macro-economic reform performance, financial maturity and stock market performance). Moreover, this research is one of the first to investigate empirically the prime relationship between several contextual variables, namely, the economic reform programme, macroeconomic reform performance,

financial maturity and stock market performance in developing countries. The research is also one of the first to test the impact of several variables on the extent to which financial markets in developing countries can be informed by the Libyan case. Additionally, it contributes to the body of knowledge by providing some guidance for future economic reform programmes and can be applied to stock market performance, given its great potential for testing theories, controlling measurement error and validating research constructs. Consideration of whether to establish such financial markets depends on whether there is a strong demand for their services by the private sector. Emanating from the current research question, further development points are that the current financial crisis requires a change in the management policy in the financial sector in order to stimulate economic activities and the establishment of new regulatory frameworks. This requires a new theory of economics; for example, a change from equilibrium theory to reflexivity theory which requires a change in the underlying model of the economic activity framework. However, as mentioned in Chapter Five, Section 5.8, the main global economy was influenced by four crises, mutually feeding on each other, viz. other climate change, oil and energy, food and financial and economic crises. The global financial crisis, for instance, started to show its effects in the middle of 2007 and into 2008, when the stock markets around the world fell and large financial institutions collapsed. As a result, governments in even the wealthiest nations have had to come up with rescue packages to bail out their financial systems. On the other hand, many people are concerned that those responsible for the financial problems are the ones being bailed out. Whilst the current research effort concerns deregulation in Libya, it is still timely, since the question about the appropriate degree of regulation can be seen as part of the same debate as to what is the appropriate level of *regulation*. To quote Timothy Geithner, United States Secretary of the Treasury, *“It’s time now for us to move together and to begin to act to put in place a stronger framework of reforms”* (Puzzanghera and Reynolds, 2009).

Further research is needed in order to provide a clear understanding of the framework that managers face under current regulatory rules in the banking system and financial markets in general. There is also a need to identify remedies for the developing regulatory framework in order to improve current practices. President Obama outlined two main goals for the G-20 *“The first is to make sure that there is concerted action around the globe to jumpstart the economy. The second goal is to make sure that we are moving forward on a regulatory reform agenda that ensures that we don’t see these systemic risks and the potential for this kind of crisis again in the future”*. As a result of the current crisis, regulation is rising and is creating new challenges that need managing. Further concerns mentioned by Obama include *“We’re*

*moving forward in stabilising the financial system through a whole host of steps that have already been taken and a number of steps that we intend to take in the future to make sure that the financial system is solvent, that our banks are strong, and that we start lending again to businesses and consumers” (Sherman, 2009).*

Regulation changes in the UK may help banks by improving liquidity, relating to the ability of the banks to manage cash and stimulate the UK economy. These funding needs may differ from those in other countries or those advanced by the Basel Committee. The discussion highlighted shows that this is not a normal cyclical crisis of capitalism but a global crisis, which needs to be tackled with new regulatory frameworks for financial institutions. Future research is needed to meet up-to-date information regarding the nature of capital markets and financial institutions. It is hoped, however, that this research will stimulate the economic reform programme, macro-economic reform performance, financial maturity and stock market performance in Libya in particular, as well as other comparable nations. Achieving these goals, and others, remains dependent on serious and comprehensive restructuring programmes.

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<sup>63</sup> This research used Harvard System referencing, as explained by the University of Huddersfield's Referencing Handbook, September 2007. University of Huddersfield, the Library and Computing Centre, UK.



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## APPENDICES

**Appendix A: General Information about Libya**

This appendix is designed to provide the reader with the background of the country in which this study is conducted. Different issues will be highlighted in the following sections, including figures, tables and the rationale behind this discussion: a brief review of the main changes in the political and economical systems since the independence of country.

**A.1 SUBSEQUENT STEPS**

Following the 1969 revolution the fundamental structure of the Libyan economy altered. Several steps were taken by the revolutionary government in order to reform the existing economic situation, where the nation was transformed from a constitutional monarchy into a revolutionary republic. In the first year the Libyan government nationalised foreign banks and their local branches. Looking back to the early period (1963-1969), the government, at that juncture, required a change of the banking system through “libyanisation” and nationalisation of foreign banking operations in Libya, transforming them into Libyan banking corporations in which Libyans contributed not less than 51 *per cent* of their capital and participated in the management and direction of their activities in a manner serving the national economic welfare. The results of such efforts are shown in the following banks and corporations (Masoud, 1998):

1. Sahara Bank: established on 11 July 1964, replaced the Cecilia Bank. The distribution of its capital was:
  - 51 *per cent* Libyan, 29 *per cent* Bank of America and 20 *per cent* Bank of Cecelia.
2. Commercial Bank: newly established on 16 June 1964, with the following rates:
  - 51 *per cent* Libyan and 49 *per cent* Central Bank of England
3. African Banking Corporation: established on 11 September 1964, instead of the Algerian Tunisian Real Estate Bank, with the following rates:
  - 51 *per cent* Libyan and 49 *per cent* the Algerian Tunisian Bank.
4. North Africa Bank: established on 1 January 1966, as a substitute for the British Bank for the Middle East, where its capital was distributed as:
  - 52 *per cent* Libyan, 35 *per cent* the British Bank for the Middle East, 10 *per cent* Morgan Bank
5. Bank of the Arab Evolution: established on 1 August 1967, replacing the Bank of Egypt, with its ownership:
  - 51 *per cent* Libyan and 49 *per cent* Bank of Egypt.

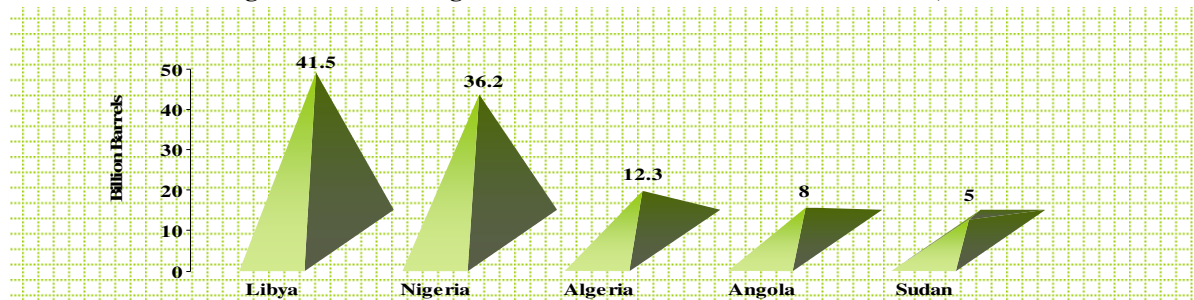
Until the end of this period (1963-1969), the trading bank system operated with five libyanised banks and four foreign banks which refused to undergo “libyanisation”, despite the separation of their capitals and needs from their main headquarters. These were the Bank of Roma, Barclays, Napoli and the Arabian Bank. The second specialisation bank was established, known as the Libyan Real-Estate Industrial Bank, as per the law issued on 7 September 1965 which allocated one half of its capital to industrial investment and the other half to real estate capital. March 1977 witnessed the declaration of the Libyan Jamahiriya. This is a state of masses involving the transformative experiment of both regulation and executive powers of their own political and economic affairs to the people. Additionally, the new regime succeeded in altering oil prices and production per-capita income. Table A.3.3, presents some significant indicators within the Libyan economy during the period 1970-2006. In the early 1970s per-capita income was 2500 US\$, increasing sharply to 12,091.2 US\$ to reach the highest per-capita income in North Africa; then it decreased to 8,327.3 US\$ towards the end of 2006 due to fluctuation of oil prices. Likewise, GDP growth rate was estimated at 5 billion US\$ in 1970, increasing to 36.8 billion US\$ in 1980 and then to approximately 49.7 billion US\$ by the end of 2006. The oil sector contributed more than 40 *per cent* of GDP. During mid-1980, however, the Libyan economy was severely affected by the slump in oil revenues due to low barrel prices, with a decline in revenue from 6.9 billion US\$ in 1980 to about 5.9 billion US\$ in 1988.

Since 1961 oil revenues have remained the key source of income, providing the Libyan economy with most of its hard currency. In 1992 the economy was affected by UN and US sanctions. Consequently, oil exports and other goods declined to a value of 6.8 billion US\$ in 2000 and jumped billions US\$ to 38.2 by the end of 2006 due to surging world oil supply demand. Libya is determined to reduce its dependence on the oil sector by promoting the private sector and supporting small and medium-sized enterprises to investing in other economic sectors: natural

gas; agricultural; industry; tourism; fisheries. Therefore, as mentioned in previous discussion, to understand Libya's economy it is necessary to comprehend its revenue sources and the structure of the economy. The Libyan economy has additionally become more successful compared with oil-producing nations (see Table A.3.13). For instance, Libya's oil price increased in the 70s from 2.23 US\$ per barrel in 1969 to 25.28 US\$ per barrel in 1979 (CBL, 1979). Then during 2003-2008, the figure rose from 17.2 US\$ in 1999 to 86.0 US\$ in 2008 (Table A.3.4). Due to favourable world conditions, oil revenue to Libya in the external current account surplus rose sharply from 15.4 *per cent* of GDP in 2003 to 25 *per cent* in 2004, then to about 52 *per cent* in 2006. Accordingly, Libya's gross international reserves increased to 18.9 billion US\$ in 2003 and 24.6 billion US\$ in 2004.

Libya, as a member of the Organisation of Petroleum Exporting Countries (OPEC), holds the largest established oil reserves among African nations, followed by Nigeria and Algeria, where Libya had total proven oil reserves of 41.5 billion barrels at the end of January 2007, up from 39.1 billion barrels in 2006. Some 80 *per cent* of Libyan proven oil reserves are located in the Sirte basin area, which is responsible for about 90 *per cent* of the country's oil output. This attracted worldwide attention to the post-reform programme of the Libyan economy, as it was believed that increased economic development bore a significant influence on the economic future of the MENA regions and the world economic situation. Figure A 1.1 displays the five leading African proven oil reserves during 2007.

**Figure A 1.1 Leading Five African Proven Oil Reserve Holders, 2007**



Source: Libya Energy Data, Statistics and Analysis (2007).

According to the IMF report (2007), Libya still faces key challenges in the medium term due to its strong financial position and the favourable global (environmental) conditions, which provide an opportunity to take additional forward steps to address certain challenges: containing the increase in spending and enhancing its quality; developing the financial sector and infrastructure; supporting management of oil savings to defend intergenerational equity; improving the domestic business climate; increasing the productive base in order to reduce oil dependence. All these factors aid the government to enjoy a fast-growing GDP, including the labour force. The subsequent main subsections explain evolution of the Libyan situation and how the political landscape altered and the economy improved: Subsection A.1.1 discusses the political scene and determinants of economic reform; Subsection A.1.2 concerns growth and structure of the Libyan economy. These issues are now discussed.

### **A.1.1 Political Determinants of Economic Reform**

Col. Al-Qaddafi has ruled Libya since 1969, when he and a group of officers overthrew King Idris. Borrowing from the Islamic world, his regime adopted Arab Socialist ideas, which refused to establish a “*third way*” after communism and capitalism<sup>64</sup>. In the early 1970s, the Libyan economy was driven by the Third Universal Theory’

<sup>64</sup> Col. Al-Qaddafi based the Third Universal theory on nationalism and religion, two forces he described as the paramount drives moving history and humankind. Nationalism was considered to be the natural result of the world's *racial* and *cultural* diversity and, therefore, a significant and productive force. For instance, Arab nationalism was considered to have especially high and glorious roots in the ancient past. Due to the Arab nation being the product of an age-old civilisation based on the divine and universal message of Islam (John, 2006), Qaddafi argued that it had the right, as a duty, to be the bearer of the TUT to the world.

(TUT) which is based on the “*Green Book*”<sup>65</sup>. The original framework of this theory was written by Col. Al-Qaddafi. It opted for a socialist state and a state-planned Libyan economy for “socioeconomic transformation”. Investment was essentially state-driven and trade and price controls, along with subsidies, were widespread. Economic performance was strictly constrained by stifling government interference in the economy and an unfavourable business climate (US Commercial Service, 2006). In 1973 Qaddafi proclaimed the “cultural” or “popular revolution” and introduced the new idea of “people’s power”, which includes the formation of “people’s committees” in schools, universities, hospitals, workplaces and administrative districts.

Theoretically, the GPCs meetings became a forum for Libyans for all social and economic transformations, which is the area of economy and planning consultant to the peak based on the popular annual process of GPCs (conference) with superficial similarities to the western-style Congress or Parliament. The group consists of representatives of the staff of the Basic People’s Congresses (BPC), which became the key administrative units, the secretaries of unions, associations and professional syndicates, the secretariat of the GPC and the Governor of the Central Bank of Libya (CBL). During the conference, usually held in March, the popular committees choose their secretariats which, in turn, appoint the committee “*trustees*”, equivalent to the ministers in a western parliamentary system. Only the General People are the delegates who discuss issues relating to national security and foreign policy, the national budget and oil policy. The General People’s Supreme Committee and Sebha were declared by President Al-Qaddafi as “the Libyan”, a new Arab expression meaning “State Masses”. Literature on the politics of economic reform, however, has usually focused on overcoming obstacles to launching reform programmes. The principal assumption is that any government attempting stabilisation and market-oriented economic reforms, whether democratic or not, must cope with political instability inherent in the nature of these measures. Both stabilisation and structural reform impose costs that are immediate, certain and often concentrated on specific solutions.

Since the removal of UN sanctions in 1999, Libya has been gradually implementing measures to reform and adopt fresh steps to liberalise its still largely socialist economy. It ceased supporting terrorism, bridged its relations with European countries and ended animosity with the US by settling the Lockerbie issue and paying compensation. It reached a point when it admitted to owning weapons of mass destruction and agreed to destroy them, in addition to stating that Israel represented no danger to its national security. However, it is only since the lifting of UN sanctions and all US Libya-specific trade sanctions in September 2003 and 2004, respectively, that the pace of reform has accelerated somewhat, with the implementation of measures aimed at enhancing the role of the private sector in the economy (IMF, 2005). On 28 June 2004 the US renewed direct diplomatic relations with Libya. On 20 September of the same year President Bush terminated the state of emergency against Libya by executive order. This action eliminated most of the economic sanctions imposed on Libya and led to the release of Libyan assets frozen in the US.

### A.1.2 Growth and Structure of the Libyan Economy

Following the revolution in September 1969, growth and structure of the Libyan economy began in many areas: social; political; legal and economic. In developing the structure and reframing of the Libyan economy, the economic and political policy on various environmental and social factors has moved forward (see Table A.3.5). Fulfilment of society’s needs for commodities and services, on the one hand, and finally reducing dependence on oil income and utilisation of natural and human resources, on the other, have characterised the political policy and economic development in Libya during three periods.

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<sup>65</sup> The *Green Book* is one written by the Libyan leader, Col. Al-Qaddafi, first published in 1975, expounding his views on democracy and his political philosophy via the theory of TUT, called “Freedom, Social and Unity” following the Egyptian model influenced by the revolutionary ideas of the Egyptian leader Jamal Abdul Nasser. He explained that in his theory all previous theories undertake the economic problem either from the angle of ownership of any of the elements of production, or from that of wages for production. Therefore, to resolve the problem of production field due to the fact that they are based on a wage system. This system deprives workers of any right to the products being produced, whether a society or a private establishment.

***The First Period 1955-1969***

This period is recognised as financial, to a large extent, starting in the mid-1950s when the oil companies began to enter Libyan territories for oil extraction. Oil was first discovered in 1958 and by 1962 export commenced, consisting of about 30 *per cent* of the local product in total. “*It’s the main resource for the currency*” (Alfajori, 2003: 178). An economic expert, Farley (1971), stated that the Libyan economy, prior to the discovery of oil, was in a backward state because there were no indications of economic growth existing at that time. This sector is indirectly relevant to other economic sectors such as education, health, electricity, the construction industry and agriculture, etc. The Libyan economy, however, following the 1969 revolution, has developed within the last three decades to adopt a socialist philosophy, which encourages public ownership and variant national income due to the independence of oil wealth. This, in a way, has enabled the country to switch to productive assets and to replace the achieved revenues from new resources instead of the oil revenues, continuously and regularly (El-Qumati, 1993). Nonetheless, laws were issued from the trade economy organisation. Regulations controlling trade and economic policy can be summarised thus:

- Law supervising finance issued in 1955
- Export and import law no.59 in 1957
- Law to regulate export and import no. 59 in 1957
- Treasury minister’s decision no. 2 in 1962 regarding customs tariffs
- Supervision of foreign expenditure
- Quantity limitations on imports (import permits).

***The Second Period 1970-1998***

The plan for the *economic development programme* for 1996-2000 was based on economic and social transformations in the production and service sectors, aimed at providing goods and services that fulfilled the needs of the local market and lowered importation levels. Investment expenditure on industrial, agricultural and staple goods sectors reached 11 million LD in three decades (1970-2002), with 36 million US\$ spent, using an exchange rate of 3.3. Furthermore, the level of investment rate was about 1,574 million LD (CBL, 2002). Following a strategic policy to encourage exports, the Libyan government established a board for developing exports and marketing them in foreign outlets (i.e. presenting attractive prices, powerful advertisements and, sometimes, selling on credit). However, Libyan exports were subject to three basic shocks during the 1970s and 80s; the impact of said shocks was generally positive on the Libyan economy. Firstly, oil prices had increased sharply in 1973/74 and 1979/80 (price per barrel increased four times) due to the Arab-Israeli and Iran-Iraq wars (see Table A.3.6). The maximum oil production capacity was 332 million barrels per day by 1970 and the barrel price increased from 22.3 to 26.2 US\$ just one year later. The price of oil increased four times during the 1970-1973 period, sustaining economic growth and prosperity (Libya’s revolution in year 30).

Secondly, during the early 1980s and late 1990s the political and oil crises led to the nationalisation of Libyan oil companies (see Table A.3.7). Fisher (1990) argued that, during the 1980s, the Libyan economy was deeply affected by the low price of oil. This, in turn, negatively affected the government’s general budget along with the international economic depression and, most importantly, the US embargo of Libya. As the leading importer of its oil, US economic sanctions affected heavily upon the Libyan economy (OPEC). This situation hugely affected economic transformation plans. In the 1970s and early 1980s, for example, the amount designated for the *fifth plan* (1981-1985) was to be 185 million LD or the equivalent of 55 billion US\$; but it had to wait until 1981 so that the conditions could be met. Subsequently, an increase in public expenditure weakened the *transformation plan* from 27,051 million LD in 1981 to 176 million LD in 2000. Due to expansion in *transformation plans* to include projects of construction an increase of between 2,345 million LD in 1980 and 15,007 million LD in 1999 was required. Therefore, the government had to plug the financial gap between what was planned for and the actual amounts available for these projects (Faiaadh and Almejairy, 2003). Table A.3.7 summarises the percentages of Libyan economic growth between 1962-2000.

***The Third Period 1999-2007***

This period is recognised as experiencing higher oil export revenues. Libya underwent strong economic growth during 2003, with real GDP estimated to have increased by around 2.7 and 3.8 *per cent*, up from 0.2 to 1.5 *per cent* growth in 2002 (see Table A.3.8). For 2004, a real GDP growth of 2.3 and 2.6 *per cent* was fore cast, with

consumer price inflation of 1.9 and 3.5 *per cent*. One study indicated that the increase or decrease in oil prices of 10 *per cent* caused an increase or decrease in the GDP of 3 *per cent* (UNDR, 1999).

Although by the late 1990s and the beginning of this century the Libyan economy had benefited significantly from the *open door policy* in terms of rate of growth, it had, at the same time, become heavily dependent on the oil sector, a source of national income and foreign exchange. Oil exports constituted more than 96 *per cent* of total exports, which represented the leading source of foreign currency. In addition to the high rate of economic vulnerability, the ratio of imports to GDP accounted for between 25 and 30 *per cent* and the ratio of trade to GDP increased by more than 58 *per cent* on average during the latter part of the period and reached 69.1 *per cent* in 2005, when Libya imported more than 70 *per cent* of its goods from overseas, as reported in Table A.3.9.

Regarding the comparison in terms of the performance of Africa's Ten Largest Economies (ATLEs). The higher growth of the ATLEs was attributable to the strong performance of five out of six North African countries belonging to this group: Algeria; Morocco; Tunisia; Libya and Sudan, as Table A.3.10 displays. These countries registered growth rates of over 5 *per cent* in 2004. In the remaining North African state, Egypt, the economy grew at 4.1 *per cent*. In 2006 Egypt increased by 6.12 *per cent*, whereas Algeria, probably more disproportionately affected by negative domestic developments, grew by only 3.6 *per cent*. Angola is estimated to have had a high growth rate of 18.6 *per cent* in 2006 compared to 11.2 *per cent* in 2004, as a result of cessation of its civil war in 2002. As already indicated, the challenges mentioned are beginning to be addressed. For instance, the pace of economic and structural reform in Libya has improved since the lifting of the UN and US trade sanctions when other developing countries' rates grew worldwide with an average annual growth rate of real GDP around 0.3 *per cent* since 1999 (see Chapter Five, Figure 5.5).

## A.2 LIBYAN STOCK MARKET

As early mentioned in Chapter Two, with the introduction of an "open door policy" during 1999, the Libyan economy considered how economic reform programmes may benefit businesses and how they may be managed. They reactivated the private sector ownership and aimed to attract foreign investment including mobile domestic investment and allocation of resources. Additionally, the Libyan economy sought guidance from emerging countries, those which have undergone the experiment of financial markets. These issues are discussed subsequently.

### A.2.1 What the Libyan Economy Can Learn from Emerging Countries

The inherent relationship between stock market and economic development of a country is well understood by Libyan economists. Over the last decade or so, many Middle Eastern and other emerging economies and developed countries worldwide have established the stock markets. These have rendered it easy for such countries to increase their own private sector investment within their own economies and economic infrastructures. Along with this investment, a knock-on-effect has increased trade and, indeed, established a solid base for technological trade in such nations. In 1996, however, the number of stock markets throughout the developing world continued to rise to constitute almost 60 *per cent* of the entire world stock markets with a total capital of some 1.9 trillion US\$. It is suggested that, in those countries, liquidity has increased even faster, and turnover leapt from 26 to 85 *per cent* of emerging market capitalisation between 1985 and 1999 (Levine, 2003). Latin America witnessed the greatest decline in market capitalisation (down 36 *per cent* post-July 1997) before recovering by mid-1999. Asia, too, declined 9.2 *per cent* in June 1997 to peak by the end of 1999. However, the Middle Eastern stock markets have a different efficiency from equity stock markets in developed countries. This is because many are smaller, some are new and others have been successfully closed to foreign investors. The whole Middle Eastern market accounted for approximately 0.9 *per cent* of world stock market capitalisation and 8.0 *per cent* of emerging market capitalisation by the end of 2001 (Smith, 2007).

Gentzoglanis (2007) tested four Arab nations' stock market performance and economic growth. He found that, the share performance is very weak in Egypt's stock market, particularly after the 11 September (2001) attacks and the reduction in world economic growth. Foreign brokers' transactions fell to about 6 *per cent* in March 2002 from a total 25 *per cent*, whilst the Hermes share index was at its lowest level for 8 years. Morocco was another example of a poorly performing stock exchange, attributable to a number of factors: the poor results of listed companies; government failure to float some capital of privatised companies on the national stock exchange; lack of investor interest in emerging markets. Further, in January 2002, the launch of new indexes failed to increase

interest in stocks and the stock market failed to renew. The key share index (IGB) tumbled about 7.4 *per cent*, after a 15.3 *per cent* decline in 2000, with 13 *per cent* fewer transactions of 60 *per cent* less by 2000. Similarly, in Tunisia stock exchange activity was very weak and limited as the issues accounted for 90 *per cent* of the primary market. There was a lack of foreign investor interest in the financial market. Differently, Jordan's "Amman Financial Market" is one of the most open to foreign investors and the fastest growing stock market in the region with a market capitalisation close to 5 billion US\$, providing the ratio of a market capitalisation to GDP of about 77 *per cent*. The market capitalisation growth rate has risen by 158 *per cent* during the last five years. Jordan, however, introduced a modern Securities' Law to create a regulatory body by separating the regulatory function from the technical side of the stock market. This led to an increase in investors' confidence to invest. Also, the flow of information among the market institutions, investors and participants was made transparent and the creation of sophisticated and administrative functions within market institutions helped Jordan's financial stock market to a regional boost. Likewise, Jordan's financial market is well placed to be more competitive, as the government created four other bodies, i.e. the Jordan Stock Exchange (JSE), Jordan Stock Depository (JSD) and Jordan Securities Exchange industry to represent the private sector (JSEC) besides providing proper training in securities' dealing.

## **A.2.2 Characteristics of the Libyan Stock Market**

The Libyan stock market consists of a broad range of participants which include companies, individual investors, institutional investors, financial instructors and dealers with assigned responsibilities. Trading in the market is based on a continuous trading system. Each company has an assigned board on the trading office and all trades have to be executed *vis a vis* a licensed broker in the office. By mid-2008 there were 15 brokerage firms licensed by the Libyan stock market to trade in the market. They can also buy and sell securities on behalf of their customers against commission and occasionally for their own account. While their legal unit and nature takes the form of a limited liability company the two may comprise a partnership functioning solely as a broker. Although investors in the Libyan stock market, particularly in the secondary market, are of assorted groups, the breakdown of various types of investors is not recognised. There is no available information on the percentage of individual investors as opposed to institutional investors; therefore, this type of information is vital. Clearly, the primary institutional investors in Libya consist of insurance companies, banking institutions, the Libyan Investment Corporation (government agency), saving funds, and different employee provident and investment funds. Whilst the first two institutions have been mainly net buyers in the market, they do not participate frequently on the selling side.

### **A.2.2.1 The Market Trading System**

As mentioned in previous discussion (Chapter Five) the security traded on the Libyan stock market is divided into two groups: equities and debt instrument. The buying and selling of orders is handled by licensed brokers and implemented on a continuous action basis during trading hours. The passing of customer orders by telephone or verbally, therefore, is acceptable as long as such orders are subsequently confirmed either via order forms accordingly completed and signed by customers, or by a corresponding statement transmitted in written form. Trading for the officer occurs in units, each worth LD 50 of nominal value of the shares. Most shares have a nominal value of LD 1, with the exception of shares whose average ranged between 8 to 10 LD, such as the Wahda Bank, Tripoli Regional Bank, Cement Regional Company, Suq Al-Gumaa Regional Bank and United Company for Insurance with a nominal value of LD 10. Therefore, among brokers take place a spot basis at (T+1); the prices of shares are quoted in LD which increases with the greatest change of 5 *per cent* on the previous day's close compulsory on the daily movement of a share. Consequently, a ceiling is applied to prevent large price fluctuations to eliminate unnecessary speculation and to protect the interest of small investors. The exception to this rule occurs only when there is a stock dividend and a price adjustment is required or when a company is originally listed in which case its price is floated for 15 minutes or so and the base price is then set for that day. Evidently, the Libyan stock market provides an up-to-date record of all transactions and all traded shares are registered. The registration might occur on the day following the trading day, when the brokers record the transaction with the Libyan stock market. The latter is given two subsequent business days to update its records and to deliver all transactions (tighten) to the issuing companies who should resultingly update their records within three or so business days.



#### **A.2.2.2 Available Market Information**

As is well known, in any particular investment business area it is significant to bear all available information databases. The investor will have to consider factors such as company reports, statement sheets, government deregulation policy, economic growth and many other aspects besides. In Libya, however, the source of information available about investment and business in company shares can be divided into four groups: online databases available, company reports, stock market publications and brokers' research.

##### **A.2.2.2.1 Online Databases Available**

On 17 February 2008, the Libyan stock market started implementation of the new Electronic Trading System under the name "*Libyan Stock Market*" within a website access "*www.lsm.gov.ly*". This new system allowed market deals to be more easily processed and helped to provide information that is more accurate. The Libyan market relies on this electronic trading system which includes five brokerage firms via the request of five agents to record their statements and book the assets. In addition, they review the mechanisms of work of conservation and how to register requests for proposal for all brokerage firms and accounting market general index, which begin by 1000 points besides controlling commerce programmes. This is considered a qualitative leap for the market in order to provide more information transparency and safety for both investors and traders by entering all the orders into the computer system, matching supply and demand for securities electronically setting the network and applying prices. Since it started providing information, the market has experienced growth in a number of transactions. For instance, the number of listed companies has increased from 3 in 2006 to more than 7 in 2008. Furthermore, market capitalisation increased from 254,543,455 million LD in mid-2007 to approximately 1,021,115,386.730 million LD in mid-2008.

##### **A.2.2.2.2 Company Reports**

Although the most truthful and direct sources of information are created by company reports, all the listed companies are required by law to publish their annual reports during the first four months following the end of the financial year. These include a profit and loss account and a balance sheet. In the former, charges for depreciation interest on loans and overdrafts, investment income, charges in corporate tax, proposed and paid dividends, pension and compensation, auditors' remuneration and turnover are listed. One of the significant conditions of admission into the listed stock market is that the company should be prepared to provide shareholders with sufficient information for its assessment. To achieve this, companies are required to enter into a general agreement with the stock market for the provision of information availability. One of the provisions is to prepare a half-yearly report to be sent to shareholders. This should include statements of profit and loss, and comparative figures for the matching period should be provided. Supplementary information may also be contained in the Chairman's Report. From a browse *vis a vis* annual reports, as the key sections include notice of the annual general meeting, List of Directors, Chairman's Review, Secretary and Auditors, Director's Report, Report of the Auditors and the Accounts. The balance sheet includes terms such as loans, overdrafts and details of share capital, current and other assets including listed and unlisted investments, loans to directors, details of valuation of certain assets and any alteration in the company's assets.

##### **A.2.2.2.3 Stock Market Publications**

The Libyan stock market has been active in providing significant information about the listed companies.

#### **1 Annual Report**

The Libyan stock market provides a published annual report on the year's market activities. For instance, it notes the number of transactions made, the number of shares traded and their market value. New issues offered by companies, companies' authorised capital and other similar information are included. The report additionally includes all the licensed brokers, the market achievements and the chairman's view regarding future plans.

## **2 Monthly Statistical Bulletin**

A monthly statistical bulletin is published by the national stock market, containing valuable data and the financial ratios of listed companies. The bulletin also includes sectoral data, cumulative market data and individual company data.

## **3 Companies' Guide**

The Libyan stock market publishes the national shareholding companies' guide on an annual basis in order to provide interested parties with a reference that contains significant information needed by shareholders. The guide gives valuable data and the financial ratios of listed companies, it additionally features the number of shareholders, ownership ratios, the number of employees in each financial limit of the economy and their balance sheets and profit and loss statement for the past three to five years. Furthermore the results and regulations of the market, bank, company and insurance laws are published.

## **4 Daily Official List**

The traded share prices are quoted on a daily and weekly basis via the local Arabic and English newspapers, reporting the total number of traded shares, their market value and the number of transactions made, the closing prices and the nominal value of quoted shares. Therefore, a short daily price quotation is published in the Libyan media (television and radio). The closing prices of Libyan shares listed and traded are quoted and transmitted by the network worldwide. Likewise, private ownership companies have begun participating in the disclosure process by facilitating access to supply more market information by computer network and telecommunication services.

### **A.2.2.2.4 Brokers' Research**

The brokers in the Libyan stock market still undergo research on the listed companies for several reasons, largely, the small markets. However, some brokerage firms have started conducting activities in the market, which also maintain a database on prices and the company outcome. This information is usually supplied to key investors when required. There are also several international institutions that provide this kind of information about the market and companies in the stock market. For instance, IMF and World Bank databases cover the Libyan situation in their emerging market reports, in addition to MENA and AMF which publish databases covering Libya in their literature.

### **A.2.3 Agreement for Joint Co-operation**

The agreement for joint co-operation partnerships is threefold: agreement with Arab Society of Certified Accountants; London Stock Exchange and University of Reading. These three issues are discussed next.

- *Agreement with Arab Society of Certified Accountants*

Jordan signed an agreement in October 2007 for joint co-operation between the Libyan stock market and the Arab Society of Certified Accountants (ASCA). Current policy of the convention within the Libyan stock market is rehabilitation and development of employee skills in accounting and auditing and enrichment of their knowledge by examining and reviewing updated methods of international accounting. ASCA publicity for the Libyan stock market is available online (network) under the framework of scientific programmes agreed upon.

- *Agreement with London Stock Exchange*

On 15 October 2007 an agreement was signed in London for joint co-operation between the Libyan stock market and the London Stock Exchange in the area of training and skills development. The convention benefits from the lengthy LSE experience in this area which is used for the rehabilitation of Libyan stock market cadres to perform their duties to the fullest extent in addition to reviewing the rules and regulations in force in the Libyan stock market and developing the commensurate changes required by each stage. The convention additionally stipulates the need for participation of the Libyan side in each symposia and conference held under the auspices of the LSE.

■ *Agreement with the University of Reading*

The Libyan stock market signed a joint co-operation agreement on 17<sup>th</sup> October 2007 with the University of Reading in the area of securities' trading in securities. Under this agreement technical assistance and training will be provided in both Libya and Britain to market intermediaries and workers on the disclosure of financial data, arbitration and dispute resolution, governance and the preparation of legal rules and regulations to enhance the performance of censorship and protect users. In addition, it will provide consultancy for the development of the financial markets.

### A.3 The Country's Economic Statistics

**Table A 3.1 Population, Labour Force and Fertility**

Countries	Population Growth (Annual %)				Growth of Labour Force (Annual %)			Fertility Rate, Total (Births per Female)				
	1960	1997	1975	2005	1975	1995	1996	1988	2002	1970	1995	2000
	1988	2002	2005	2015	1984	2002	2005			1975	2002	2005
Algeria	2.9	1.6	2.4	1.5	3.2	3.4	15.3	6.0	2.8	7.4	3.8	2.5
Egypt	2.5	1.9	2.1	1.7	2.2	3.0	11.0	4.8	3.1	5.9	3.4	3.2
Iran	3.5	1.2	2.4	1.3	3.0	2.7	11.5	5.6	2.0	6.4	2.8	2.1
Iraq	3.5	2.1	NA	NA	2.8	3.0	1.1	6.3	4.1	NA	5.3	NA
Jordan	3.1	3.0	3.5	2.2	2.1	4.1	NA	7.2	3.5	7.8	4.9	3.5
Kuwait	7.2	3.4	3.3	2.2	7.5	5.7	1.1	4.8	2.5	6.9	2.9	2.3
Lebanon	1.5	1.4	1.3	1.0	-0.1	2.7	NA	3.3	2.2	4.8	2.7	2.3
Libya	4.2	2.0	2.9	1.9	4.3	2.1	NA	6.8	3.3	7.6	3.8	3.0
Morocco	2.6	1.7	1.9	1.2	3.2	2.5	11.0	4.8	2.8	6.9	3.1	2.5
Mauritania	2.4	1.6	2.7	2.4	NA	2.0	NA	6.5	3.2	6.6	5.5	4.8
Oman	3.6	2.6	3.4	2.0	5.7	2.3	NA	7.2	4.0	7.2	5.9	3.7
Saudi Arabia	4.3	2.7	3.9	2.1	5.1	2.9	5.2	7.2	5.3	7.3	5.8	3.8
Syria	3.4	2.5	3.1	2.2	3.1	4.1	11.7	6.7	3.4	7.5	4.0	3.5
Tunisia	2.2	1.2	1.9	1.0	3.7	2.5	14.2	4.0	2.1	6.2	2.6	2.0
Turkey	2.4	1.7	1.9	1.2	1.4	2.5	9.9	3.5	2.2	5.3	2.5	2.2
UAE	10.5	4.9	6.8	2.5	21.8	4.4	2.3	4.8	3.0	6.4	3.4	2.5
Yemen	2.4	2.9	3.6	2.9	1.7	3.0	11.5	7.0	6.0	8.7	7.6	6.0
MENA	2.7	1.9	2.6	1.9	2.8	2.9	NA	3.5	3.1	6.7	4.1	3.6
East Asia and Pacific	2.0	1.0	1.3	0.7	2.3	1.2	NA	3.6	2.1	5.0	1.8	1.9
South Asia	2.4	1.8	2.1	1.5	2.3	2.4	NA	2.7	3.2	5.5	3.3	3.2
Sub-Saharan Africa	2.8	2.4	2.8	2.3	2.6	2.6		5.2	5.1	6.8	5.5	5.5
Latin America and the Caribbean	2.5	1.5	1.8	1.2	3.2	2.2	NA	6.0	2.5	5.5	2.7	2.5
Developing countries	2.3	2.0	1.9	1.3	3.1	2.8	NA	1.9	2.3	5.4	3.0	2.9
World	1.8	1.1	1.6	1.1	2.7	2.1	NA	2.6	2.1	4.5	2.7	2.6

Notice a: NA: Not Applicable.

Source: Human Development Report (1990, 2000, 2006 and 2007/2008).

**Table A 3.2 The Libyan Economy by Sectors, 1958-1969**

Economic Sectors	1958		1962-1969 <sup>a</sup>
	Value (million LD)	Share (per cent)	
GDP	52.2	100	22.6
Agriculture, Forestry and Fishing	13.6	26.1	4.1
Mining and Quarrying (Inc. oil )	3.6	6.9	46.7
Manufacturing	6	11.5	8.4
Construction	1.8	3.4	19.9
Transport and Communication	2.9	5.6	16.6
Wholesale and Retail Trade	7.3	14	12.7
Services Gathering	7.5	14.3	13.4
Banking, Insurance, Dwelling and Social Services	9.5	18.2	NA
Export of Goods and Service	NA <sup>b</sup>	NA	31.7
Import of Goods and Service	NA	NA	10.3
Private Consumption	NA	NA	6.7
Government Consumption	NA	NA	21.6

Notice a: Average annual growth rate.

Notice b: NA= Not Applicable.

Source: The Economic development of Libya (1960); CBL, statistically monthly bulletins various issues.

**Table A 3.3 Libyan Economy Indicators, 1970-2006**

Economic Sectors	Units	Scale	1970	1980	1990	2000	2006
GDP	US\$	Billions	5.0	36.8	28.9	36.1	49.7
GDP per-capita	US\$	Units	2500	12,091.2	6,674.3	6,807.8	8,327.3
Population	Persons	Millions	2.0	3.040	4.334	5.306	5.970
Labour Force	Persons	Thousands	400	1000	1000	1200	2000
Oil Revenue	US\$	Billions	2.7	6.9	6.8	7.2	9.8
Imports of Goods and Services	US\$	Billions	0.8	3.7	3.9	4.7	12.9
Exports of Goods and Services	US\$	Billions	2.7	5.4	6.8	13.5	38.2
Current Account Balance	US\$	Billions	0.9	8.2	2.1	11.4	25.6
Trade Balance	LD	Millions	589.2	1616.7	2234.0	3310.1	28401.6

Source: Economic Indicators of the Libyan Economy 1970-1982; IMF (2007) and CBL, Various Issues.

**Table A 3.4 Libyan Crude Oil Production and Prices during Reform Programme**

Description	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Crude oil production (millions of barrels per day)	1.32	1.35	1.32	1.20	1.53	1.62	1.69	1.72	1.80	2.00
Libyan crude oil price (US\$/bbl)	17.2	27.0	23.3	24.4	28.2	36.9	51.9	62.5	69.3	86.0

Source: IMF (2005, 2007).

**Table A 3.5 Libya Entering a New Phase in its Development**

Libya's Past	Libya's Emerging Future
Significant isolation from the outside world	Increasing integration with the outside world
Focus on equality of living conditions and social standards	Greater opportunities for individual achievement and involvement in the productive sector
Oil revenues as the main source of national prosperity	Oil revenues supplemented by wealth created in other parts of the economy
Government's central focus on the distribution of oil revenues to address social needs	Government increasingly working with the private sector to enable the creation of wealth in competitive markets

Source: Libyan data base (2006).

**Table A 3.6 The Main Political Factors Affecting Oil Production, 1973-1998**

Year	Past Political Factors	Results
1973	Arab-Israeli war	Increased oil prices
1979	Iranian crisis	Increased oil prices
1980s	<ul style="list-style-type: none"> <li>Different measures taken by industrialised countries to reduce their dependence on OPEC oil</li> <li>OPEC operation to control prices, oil production and oil quantities</li> </ul>	<ul style="list-style-type: none"> <li>Reduced oil production (oil exports and oil prices)</li> <li>Reduced oil production and oil exports</li> </ul>
1982-1988	War between Libya and Chad	Reduced oil production and oil exports
1986	US ban on importing oil from Libya	Reduced oil exports
1992-1998	UN sanctions on Libyan economy	Reduced oil production and oil exports

Source: Developed for this research from Subsection A.2.2: Growth and Structure of the Libyan Economy.

**Table A 3.7 Average Annual Growth Rates of the Libyan Economy by Sectors, 1962-2000**

Economic Sectors	1970-1982	1983-1990	1962-1990	1991-2000
GDP	13.2	-2.5	11.8	8.9
Agriculture, Forestry and Fishing	4.6	11.8	6.70	9.8
Mining and Quarrying (Inc. oil )	14.3	-7.8	17.8	22.8
Manufacturing	18.6	7.0	13.0	5.9
Construction	15.3	-1.8	12.0	5.4
Transport and Communication	18.1	-0.4	13.1	8.7
Wholesale and Retail Trade	17	-2.1	10.9	9.2
Services Gathering	14.0	2.7	11.1	10.2
Export of Goods and Service	12.4	-0.4	14.7	11.7
Imports of Goods and Service	18.4	-7.1	9.5	9.2
Private Consumption	14.1	-3.3	7.9	6.8
Government Consumption	16.8	-2.6	13.2	8.2

Source: Calculated from CBL, statistically series and monthly bulletins, various issues.

**Table A 3.8 The Main Political Factors Affecting Oil Production, 1999-2007**

Year	Past Political Factors	Results
1999-2003	The lifting of UN sanctions	Increased oil prices
2003-2007	<ul style="list-style-type: none"> <li>• Iraq War and terrorist acts against oil infrastructure in Saudi Arabia.</li> <li>• Increased demand for oil from countries such as China and the US and weakening of the US\$ against other main currencies.</li> <li>• Speculation and lack of supplies, within prosperity speculation in energy markets.</li> <li>• Nuclear weapons' crisis between Iran (the 4<sup>th</sup> largest world oil exporter) and Western countries. Also, the retreat in crude from Nigeria, (the 8<sup>th</sup> largest source country) since February 2006 due to armed attacks on the oil industry, plus non-restoration of Iraq's previous production capacity.</li> </ul>	Increased oil prices

Source: Developed for this research from Subsection A.2.2: Growth and Structure of the Libyan Economy.

**Table A 3.9 The Rate of Economic Open Door Policy, 1999-2005**

(Million LD)

Economic Sector	Years	1999	2000	2001	2002	2003	2004	2005
Exports and Re-exports		36,822	52,215	53,940	101,770	148,066	208,483	311,480
Imports		19,286	19,114	26,604	55,857	55,979	82,552	79,535
Total of Trade		56,108	71,329	80,544	157,627	204,045	291,035	391,015.0
Total of GDP		140,752	177,756	180,791	259,141	317,318	414,862	560,252
<b>Rate of Opening Policy (%) <sup>a</sup></b>		<b>39.9</b>	<b>40.1</b>	<b>44.6</b>	<b>60.8</b>	<b>64.3</b>	<b>70.2</b>	<b>69.8</b>

Notice a: Researcher's calculation.

Source: CBL (2006, 2007).

Table A 3.10 Africa's Ten Largest Economies, 2004-2006

Eco. Sectors Country	GDP At Current US\$ (billions)		Population (millions)		GDP Growth Rate ( <i>per cent</i> )		Country Total African GDP	Weight in
	2004	2006	2004	2006	2004	2006	2004	2006
South Africa	216,772	255,272	46,461	47,482	4.8	5.0	8.4	6.5
Egypt	78,802	107,375	69,330	72,131	4.1	6.8	7.2	8.8
Algeria	85,027	113,888	32,364	33,494	5.2	3.6	9.1	4.7
Nigeria	71,533	116,488	142,655	149,877	6.0	6.5	10.5	8.4
Morocco	56,392	65,405	29,839	30,436	5.2	8.0	9.1	10.3
Tunisia	28,255	30,837	9,930	10,172	6.0	5.4	10.5	7.0
Libya	30,475	50,445	5,740	5,970	5.0	5.6	8.7	7.2
Sudan	21,685	36,218	34,474	37,442	5.1	11.8	8.9	15.2
Angola	19,800	45,167	14,973	15,864	11.2	18.6	19.6	24.0
Kenya	16,249	22,819	32,808	34,046	4.6	6.1	8.0	7.9
<b>Total</b>	<b>625.0</b>	<b>843.9</b>	<b>418.6</b>	<b>436.9</b>	<b>57.2</b>	<b>77.4</b>	<b>100</b>	<b>100</b>

Source: IMF, WEO (2007).

Table A 3.11 Transferred Ownership Companies in the Libyan Stock Market

No	Company	Location	Form of Ownership Transfer
1	The Libyan Iron and Steel Company	Misratah	Joint Stock Co.
2	The Socialist Ports	Misratah	Joint Stock Co.
3	Arab Cement	Al Markab	Joint Stock Co.
4	The National Company for Fodder and Mills	Tripoli	Joint Stock Co.
5	Libyan Airlines	Tripoli	Joint Stock Co.
6	Libyan Provisions	Tripoli	Joint Stock Co.
7	Handling, Ground Services and Maintenance Company in Airports	Tripoli	Joint Stock Co.
8	Public Tobacco	Tripoli	Joint Stock Co.
9	The Libyan Company for Poultry and Livestock	Tripoli	Joint Stock Co.
10	The National General Company for Maritime Transport	Tripoli	Joint Stock Co.
11	The Libyan Insurance Company	Al Zawiya	Joint Stock Co.
12	El Bariga for Oil Marketing	Al Zawiya	Joint Stock Co.
13	General Pipeline	Benghazi	Joint Stock Co.
14	Libyan Cement	Benghazi	Joint Stock Co.
15	General Wire	Benghazi	Joint Stock Co.
16	The National Company for Pharmaceuticals and Medical Supplies	Benghazi	Joint Stock Co.
17	Trucks and Buses	Tajoura	Joint Stock Co.
18	General Electronics	Tajoura	Joint Stock Co.
19	Libyan Tractors	Tajoura	Joint Stock Co.

Source: GPC (2004).

Table A 3.12 Structural Change in the GDP by Economic Activity (1966-2007)

(Million LD)

Year	Oil and Natural Gas Activity		Total Non-oil Natural Gas Activity		Trade Balance	Current Account Balance Percent of GDP	GDP
	Value	Per cent	Value	Per cent			
1966	529.2	62.8	313.9	37.2	211.7	4.9	843.1
1967	544.4	62.9	321.7	37.1	248.2	-5.8	866.1
1968	564.9	62.6	337.2	37.4	435.2	-12.3	902.1
1969	754.7	61.7	468.3	38.3	499.4	-23.3	1223.0
1970	812.6	63.1	475.7	36.9	589.2	-36.3	1288.3
1971	922.7	58.2	663.8	41.8	597.7	-19.1	1586.5
1972	920.6	52.5	832.4	47.5	946.4	-7.8	1753.0
1973	1131.0	51.9	1050.5	48.1	1132.5	-305.0	2182.5
1974	2385.3	62.9	1410.4	37.1	1215.8	-26.8	3795.7
1975	1961.1	53.4	1713.2	46.6	1550.8	-77.0	3674.3
1976	2750.0	57.7	2018.1	42.3	2676.5	-46.5	4768.1
1977	3275.9	58.4	2336.8	41.6	1761.2	-18.6	5612.7
1978	2808.7	51.1	2687.4	48.9	1067.1	-54.0	5496.1
1979	4545.3	59.8	3057.7	40.2	1472.3	-76.7	7603.0
1980	6525.7	61.8	4028.1	38.2	746.0	22.348	10553.8
1981	4403.3	50.0	4395.5	50.0	1925.1	-12.48	8798.8
1982	4235.8	47.4	4696.6	52.6	1784.5	-4.986	8932.4
1983	3823.6	44.9	4688.1	55.1	1831.8	-5.444	8511.7
1984	3209.8	41.1	4594.9	58.9	1458.7	-5.195	7852.1
1985	3500.4	44.6	4351.7	55.4	1357.8	6.86	6960.7
1986	2595.8	37.3	4364.9	62.7	393.2	-0.733	6011.6
1987	1875.4	31.2	4136.2	68.8	107.6	-4.955	6186.0
1988	1570.0	25.4	4616.0	74.6	192.7	-7.717	7191.0
1989	2055.5	28.6	5135.5	71.4	873.2	-4.086	8246.9
1990	3243.8	39.3	5003.1	60.7	1925.4	7.423	8757.3
1991	3104.3	35.7	5653.0	64.6	1585.5	1.35	9231.9
1992	2925.7	31.7	6306.2	68.3	1616.7	5.523	9137.7
1993	2460.1	26.9	6677.6	73.1	766.3	-2.893	9670.8
1994	2892.9	29.9	6777.9	70.1	1629.3	0.555	10672.3
1995	3380	31.7	7292.3	68.3	1493.6	16.587	12372.3
1996	3960.3	32.1	8367.0	67.9	1663.9	12.868	13800.5
1997	4505.8	32.6	9294.7	67.4	1317.0	11.959	12610.6
1998	2786.0	22.1	9824.6	77.9	170.3	7.842	14075.2
1999	3995.9	28.4	10079.3	71.6	1753.6	14.033	17620.2
2000	7761.9	42.1	10695.0	57.9	3310.1	31.536	18456.9
2001	7564.1	35.0	14054.5	65.0	2733.6	13.002	21618.7
2002	15209.8	50.1	15120.7	49.9	4591.3	3.331	30330.5
2003	21514.4	57.6	15846.3	42.4	9208.7	21.92	37360.7
2004	30848.4	64.1	17257.0	35.9	12593.1	24.316	48105.4
2005	46205.7	69.5	20245.0	30.5	23194.5	41.834	66450.7
2006	58358.1	72.3	22371.8	27.7	28401.6	51.582	80729.9
2007*	61834.2	69.3	27426.1	30.7	29402.2	42.545	89260.3

Notice a: \* Preliminary data.

Source: IMF (2008); CBL, yearly statistical series, and monthly bulletin, various issue; General Planning Board, Economics and Social Indicators (1962-2000).

Table A 3.13 Libya: Basic Economic and Financial Indicators, 1997-2008

Indicators	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
<i>(Annual percentage change, unless otherwise specified)</i>												
<b>National Income and Prices</b>												
Real GDP	5.2	-3.6	0.7	2.3	0.5	-0.2	5.9	5.0	6.3	5.2	6.8	8.8
No hydrocarbons	2.0	1.8	1.9	3.0	6.8	4.7	2.2	4.1	5.5	6.1	7.5	8.0
Hydrocarbons	4.9	3.8	5.1	4.9	7.8	9.8	17.7	7.4	8.3	2.8	4.8	10.9
Nominal GDP in billions of LD	13.1	14.5	14.7	17.7	18.1	24.6	30.8	39.8	54.5	65.2	73.7	95.7
Nominal GDP in billions of US\$	37.1	31.3	30.4	34.4	28.5	19.2	24.0	30.5	41.7	49.7	58.6	76.3
Per-capita GDP in billions of US\$	4.8	5.2	5.9	6.6	5.6	3.6	4.3	5.3	7.1	8.3	9.6	12.3
CPI inflation (average)	3.6	3.7	2.6	-2.9	-8.8	-9.8	-2.1	-2.2	2.0	3.4	7.0	8.0
CPI inflation (e-o-p)	2.6	-2.9	-8.8	2.8	2.9	-2.1	-1.3	-3.5	3.0	7.2	NA	NA
<i>(In per cent of GDP)</i>												
<b>Central government finance</b>												
Revenue	35.6	34.8	39.8	42.1	44.1	46.7	53.9	58.5	68.6	72.2	74.0	76.1
Of which: Hydrocarbon	23.7	20.0	17.4	27.2	29.0	35.6	47.1	50.6	63.7	66.8	66.7	69.7
Expenditure and net lending	36.0	38.9	34.3	32.6	44.4	42.9	39.1	41.2	38.6	33.1	39.3	42.4
Of which: Capital expenditure	7.6	6.2	8.3	10.3	10.5	13.7	9.2	17.7	19.8	17.9	22.6	25.8
Overall position (deficit -)	-0.4	-4.1	5.5	9.5	-0.3	3.9	14.8	17.4	30.0	39.1	34.7	33.7
Non-oil deficit	-23.0	-22.5	-11.9	-17.7	-29.3	-31.8	-32.3	-33.3	-33.7	-27.7	-32.0	-36.0
<i>(Changes as a per cent of beginning of the year money stock)</i>												
<b>Money and credit</b>												
Money and quasi-money	3.4	6.7	5.8	1.9	20.5	5.3	8.1	9.2	29.2	20.2	31.0	24.6
Net credit to the government	-5.4	1.9	-7.3	-29.7	-1.9	-10.7	-32.8	-104.2	-58.5	-110.2	-82.4	-99.2
Credit to the economy	4.6	3.9	5.2	4.9	5.9	6.2	6.6	-0.7	4.5	6.2	4.6	5.5
Of which: Credit to the private sector	0.5	0.9	1.1	0.8	1.2	0.5	-1.1	1.1	0.8	1.6	0.7	1.4
Deposit rate (1-year deposits, in per cent)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	4.5	4.5	4.5	4.5	NA
<i>(In billions of US\$ unless otherwise indicated)</i>												
<b>Balance of payments</b>												
Exports, f.o.b.	9.9	6.0	7.2	12.1	9.0	8.3	14.6	20.4	31.3	39.2	44.5	60.6
Of which: Hydrocarbons	9.1	5.6	6.7	11.6	8.5	8.1	14.2	19.5	30.4	38.2	43.4	59.3
Imports, F.o.b.	7.2	5.6	4.7	4.1	5.3	7.4	7.2	8.8	11.2	12.9	18.6	25.3
Current account balance	1.9	-0.4	1.6	7.0	2.4	-0.2	5.2	7.4	17.4	25.6	23.5	31.2
<i>(As per cent of GDP)</i>	5.1	-1.2	5.4	20.5	8.6	-1.2	21.5	24.3	41.8	51.6	40.2	40.9
<b>Reserves</b>												
Gross official reserves	7.6	6.7	6.7	12.0	14.2	13.7	19.5	25.6	39.3	59.2	83.1	115.4
<i>(In months of next year's imports of GNFS)</i>	7.8	8.5	14.1	27.2	25.6	18.7	21.9	22.7	30.1	31.5	31.5	36.1
<b>Exchange rate 1/</b>												
Official exchange rate (LD/US\$, period average)	0.4	0.4	0.5	0.5	0.6	1.3	1.28	1.30	1.31	1.31	1.26	NA
Official exchange rate (LD/US\$, end of period)	0.4	0.5	0.5	0.5	0.7	1.2	1.30	1.24	1.35	1.28	1.27	NA
Real effective exchange rate <i>(per cent change)</i>	2.2	3.3	1.9	1.9	1.6	NA	-13.91	-8.99	-1.75	-0.33	-0.98	NA
Crude oil production (millions of barrels per day)	1.20	1.25	1.32	1.35	1.32	1.20	1.53	1.62	1.69	1.72	1.80	2.00

Source: UN United Nations (2005), IMF (2007) Country Report No.07/149 and CBL (2008).



Table A 3.14 MENA Crude Oil Production Including Libya, 1980-2005

*(Thousand Barrels per Day)*

Countries	1980	1985	1990	1995	2000	2001	2002	2003	2004	2005
Algeria	1,106.00	1,037.00	1,175.00	1,201.80	1,253.91	1,310.00	1,305.98	1,611.04	1,676.78	1,797.32
Egypt	895.00	887.00	873.00	920.00	768.33	719.66	715.42	712.67	673.38	658.20
Iran	1,662.00	2,250.00	3,088.00	3,643.22	3,724.30	3,723.30	3,444.70	3,742.80	4,001.43	4,138.58
Iraq	2,514.00	1,433.00	2,040.00	360.00	2,570.68	2,390.00	2,023.00	1,308.25	2,011.47	1,877.66
Jordan	0.0	0.0	0.33	0.03	0.04	0.04	0.02	0.02	0.02	0.02
Kuwait	1,656.00	1,023.00	1,175.00	2,057.41	2,078.50	1,997.50	1,894.16	2,136.00	2,375.70	2,529.18
Lebanon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Libya	1,787.00	1,059.00	1,375.00	1,390.00	1,410.03	1,366.55	1,318.52	1,420.52	1,515.22	1,633.11
Morocco	1.00	1.00	0.31	0.30	0.30	0.40	0.26	0.20	0.20	0.50
Mauritania	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oman	282.00	498.00	685.00	851.29	970.00	913.00	896.72	819.00	750.96	774.30
Qatar	472.00	301.00	406.00	442.00	737.20	714.15	679.11	715.00	782.54	835.00
Saudi Arabia	9,900.00	3,388.00	6,410.00	8,231.23	8,403.80	8,031.10	7,634.40	8,775.00	9,100.82	9,550.14
Sudan	0.0	0.0	0.0	0.0	186.00	209.13	238.77	269.74	342.51	350.00
Syrian	164.00	178.00	388.00	575.00	522.83	483.94	472.23	463.98	446.06	432.04
Tunisia	110.00	114.00	93.00	89.15	78.67	69.58	75.81	75.00	79.76	75.00
Turkey	46.00	41.00	73.00	67.47	52.68	48.00	46.67	45.17	42.42	43.67
UAE	1,709.00	1,193.00	2,117.00	2,233.00	2,367.83	2,205.00	2,082.00	2,348.14	2,478.26	2,535.42
Yemen	0.0	0.0	193.00	344.96	437.76	440.87	439.35	429.40	404.38	400.15
Middle East	18,442.00		18,979.02	21,823.01	20,936.38	19,602.19	20,775.27	22,388.72	22,388.72	23,107.58
Africa	6,125.00	5,371.00	6,432.31	6,954.20	7,527.15	7,525.85	7,520.1	8,156.53	8,864.01	9,645.15
Asia and Oceania	4,848.30	5,758.45	6,468.21	7,043.44	7,537.60	7,453.85	7,444.49	7,330.91	7,428.62	7,444.09
North America	11,968.00	13,187.00	11,461.33	10,982.48	10,810.61	10,957.63	11,093.36	11,357.31	11,200.28	10,880.82
World	59,557.56	53,966.19	60,491.68	62,384.88	68,494.63	68,101.03	67,167.93	69,448.44	72,512.48	73,806.86

Source: IEA (2005).

Table A 3.15 Real GDP Growth Rate Specific Countries in the World, 1985-2006

Countries	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Africa	2.6	2.4	1.8	4.0	3.0	2.3	0.3	1.2	0.4	2.5	2.9	5.7	3.2	2.8	2.6	3.1	4.2	3.6	4.6	5.5	5.2	5.7
Sub-Saharan Africa	1.7	2.5	2.3	4.5	2.9	2.1	-0.2	-1.8	0.9	2.2	3.6	5.3	3.8	1.9	2.6	3.4	4.2	3.6	4.2	5.6	5.5	5.8
Middle East	2.7	-1	2.9	-1.7	4.3	5.2	7.6	5.4	1.8	2.1	2.9	4.8	4.5	3.9	2.0	5.4	3.2	4.3	6.6	5.4	5.9	5.7
Central & Eastern Europe	2.4	3.8	3.6	1.7	1.3	-1.5	-7.7	-1.9	2.1	1.0	5.8	4.9	4.2	2.9	0.6	5	0.3	4.4	4.7	6.5	5.3	5.2
South and East Asia	7.3	6.4	7.6	9.1	5.9	5.3	6.2	9.1	9.4	9.8	9.1	8.4	6.7	4.3	6.3	7.0	6.1	7.0	8.4	8.8	8.6	8.2
Latin America	3.0	4.6	3.3	0.7	1.4	0.2	3.8	3.4	4.2	5.1	1.5	3.7	5.2	2.3	0.5	3.9	0.5	0.0	2.2	5.6	4.3	4.3

Source: IMF (2007) World Bank Outlook Database.

Table A 3.16 Inflation Rate Specific Countries in the World, 1985-2006

Countries	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Africa	14.2	17.5	17.2	17.7	20.4	15.4	36.8	43.9	36.7	49.8	33.8	28.4	13.7	9.3	11.9	13.6	12.7	9.9	10.8	8.1	8.5	9.1
Sub-Saharan Africa	15.6	19.3	20.8	21.5	24.4	17.6	42.9	52.1	44.5	61.1	38.6	33.9	16.6	10.9	15	17.4	15.7	12.3	13.4	9.7	10.6	10.7
Middle East	16.2	14.3	17.7	14.3	18.2	20.9	9.3	22.4	21.3	22	24.4	26.3	24.4	26.3	24.6	19.1	23.8	29.4	26.0	25.0	28.7	33.5
Central & Eastern Europe	16.7	16.2	20.3	36.3	78.8	119.5	89.9	86.1	75.3	59	40.6	36.6	51.7	32.7	23.0	22.8	19.4	14.7	9.2	6.1	4.8	4.1
South and East Asia	8.7	9.5	9.9	15.4	12.5	7.1	9.4	8.5	10.6	15.8	13.1	8.1	4.8	7.7	2.4	1.8	2.6	2.0	2.5	4.2	3.6	3.9
Latin America	149.4	90.2	131.2	250.5	444.6	567.6	151.3	164.8	215.8	221.4	36.4	19.8	11.9	9.0	8.2	7.6	6.1	8.9	10.5	6.5	6.3	5.8

Source: IMF (2007) World Bank Outlook Database.

Table A 3.17 Central Government in *per cent* of GDP Specific Countries in the World, 1985-2006

Countries	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Africa	-0.6	-3.3	-1.4	-3	-2.2	-1.1	-1.5	-2	-2.1	-2.9	-3.7	-1.2	-1.4	-4.5	-3.5	1.6	0.1	-1.6	-0.4	0.1	1.9	2.6
Sub-Saharan Africa	-0.4	-2.7	-1.4	-3.2	-2.1	-1.4	-2.3	-2.5	-2.4	-2.7	-3.5	-1.8	-2.5	-5.4	-4.4	-0.2	-2.2	-3.5	-2.8	-2.1	-1.1	0.3
Middle East	-1.7	-5.4	-1.9	-2.6	-0.2	0.7	-15.9	-5.1	-4.8	-0.9	0.7	2.9	1.9	-5.0	2.3	11.1	6.2	4.6	4.6	8.1	12.4	19.1
Central & Eastern Europe	-1.3	-1.5	-0.7	0.3	0.8	-0.9	0.8	0.2	-2.8	1.2	-1.3	-3.2	-3.7	-3.1	-4.4	-5.3	-2.7	-3.5	-4.3	-5.7	-5.2	-5.5
South and East Asia	-2.9	-2.2	-1.0	-1.7	-2.0	-1.3	-1.0	-1.0	-2.3	-1.2	-2.3	-1.9	0.4	2.5	2.3	2.0	1.7	2.7	2.9	2.7	3.9	3.6
Latin America	-0.3	-2.3	-1.4	-1.1	-0.5	-0.1	-1.5	-2.7	-3.3	-3.2	-2.2	-2.2	-3.3	-4.5	-3.2	-2.4	-2.8	-0.9	0.4	0.9	1.2	0.8

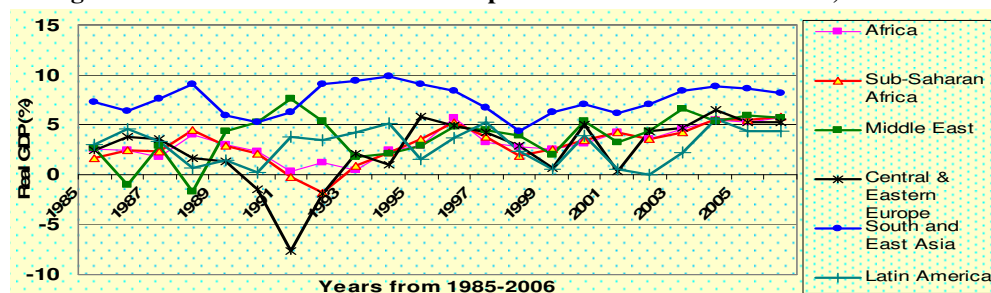
Source: IMF (2007) World Bank Outlook Database.

Table A 3.18 Difference between Savings and Investment Specific Countries in the World, 1985-2006

Countries	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Africa	22.5	22.4	20.1	20.6	20.6	19.8	20.6	20.4	19.5	20.2	20.0	19.1	19.1	20.9	20.7	19.3	20.0	19.0	20.6	21.6	21.1	22.0
Sub-Saharan Africa	18.7	19.1	17.4	19.1	18.3	17.8	18.7	17.5	17.3	18.4	18.4	17.7	18.1	19.5	18.9	17.5	18.0	16.4	18.4	19.2	19.2	19.7
Middle East	20.0	21.2	20.5	21.0	22.1	23.6	26.1	27.6	24.4	21.8	22.4	23.2	22.7	24.3	21.9	20.1	21.6	22.4	22.9	22.8	22.0	21.9
Central & Eastern Europe	28.2	28.6	28.2	28.1	27.1	27.6	23.6	20.6	22.6	21.1	23.4	24.4	25.2	25.1	24.5	25.0	22.0	22.5	22.9	24.3	24.0	24.5
South and East Asia	29.2	28.5	27.8	29.5	30.3	30.3	30.7	31.2	34.9	33.9	35.0	33.8	32.4	29.0	28.4	28.2	28.9	29.7	31.9	33.4	34.3	35.6
Latin America	20.3	19.4	21.9	22.2	22.1	19.6	19.7	20.1	20.7	21.5	21.3	21.2	22.8	22.4	20.6	21.1	20.1	19.4	19.6	20.6	20.7	21.0

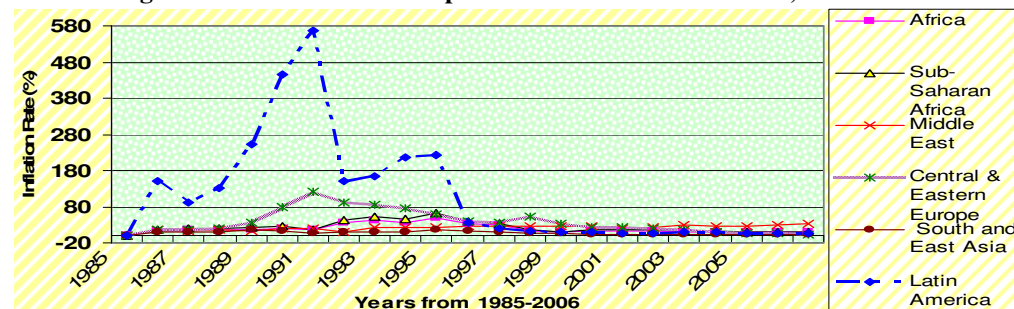
Source: IMF (2007) World Bank Outlook Database.

Figure A 3.1 Real GDP Growth Rate Specific Countries in the World, 1985-2006



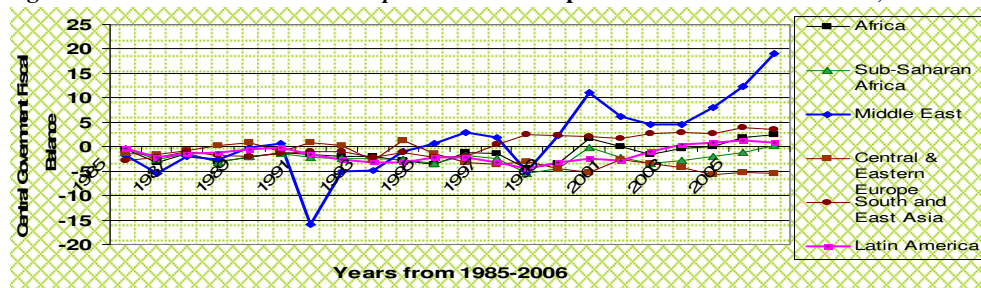
Source: Developed for this research from Table A 3.15.

Figure A 3.2 Inflation Rate Specific Countries in the World, 1985-2006



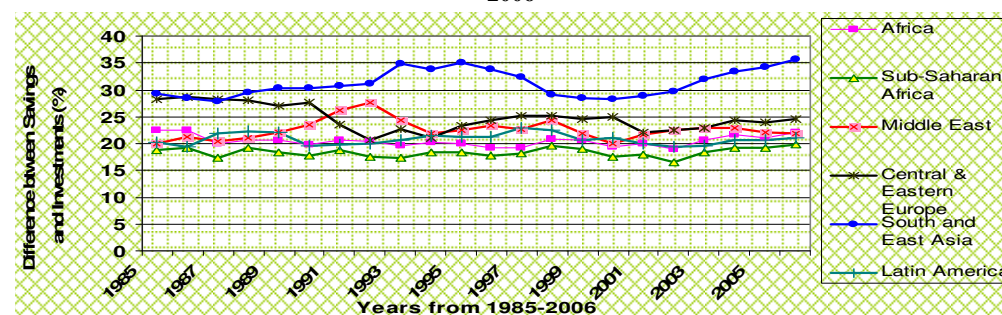
Source: Developed for this research from Table A 3.16.

Figure A 3.3 Central Government in per cent of GDP Specific Countries in the World, 1985-2006



Source: Developed for this research from Table A 3.17.

Figure A 3.4 Difference between Savings and Investment Specific Countries in the World, 1985-2006



Source: Developed for this research from Table A 3.18.

**Table A 3.19 Summary Information and Indicators in Arab Stock Market at the End of period 2007**

Country	Market Name	Web Site	Established Year	Number of List Companies	Value Traded (Million US\$)	Shares Traded (Million)	Market Capitalisation Million US\$	AMF Index <sup>c</sup>
Algeria	Algeria Stock Exchange	www.cosob.org/	1996	2	0.207	0.035	97	67.2
Bahrain	Bahrain Stock Exchange	www.bahrainstock.com	1989	51	1,069	851	27,016	209.4
Egypt	Cairo & Alex. Stock Exchange	www.egyptse.com/	1888	435	64,772	15,752	138,828	353.1
Jordan	Amman Stock Exchange	www.ase.com.jo/	1976	245	17,424	4,479	41,233	522.6
Kuwait	Kuwait Stock Exchange	www.kuwaitse.com	1977	196	130,896	70,417	135,362	444.4
Lebanon	Beirut Stock Exchange	www.bse.com.lb/	1920	15	994	114.96	10,894	135.0
Libya <sup>a</sup>	Libyan Stock Market	www.lsm.gov.ly	2006	3	25,958	254	NA	NA
Morocco	Casablanca Stock Exchange	www.casablanca-bourse.com/	1929	73	22,009	262.05	75,495	571.9
Oman	Muscat Securities Exchange	www.msm-oman.com/	1988	125	5,211	2,742	23,086	177.9
Palestine	Palestine Stock Exchange	www.p-s-e.com	1995	35	817	301	2,474	189.5
Qatar	Doha Securities Exchange	www.dsm.com.qa/dsmsite/	1959	40	29,927	3,411	95,505	478.7
Saudi Arabia	Saudi Stock Market	www.tadawul.com	1934	116	682,287	57,886	518,984	555.6
Sudan	Khartoum Stock Exchange	www.dsm.com.qa/dsmsite/	1962	52	893	9,410	4,931	182.9
Tunisia	Tunis Stock Exchange	www.bvmt.com.tn/	1969	51	727	96,65	5,339	58.4
United Emirates	Abu Dhabi Securities Exchange	www.adsm.ae	2000	64	47,746	52,067	121,128	358.9
	Dubai Financial Market	www.dfm.ae	2000	55	103,297	105,257	138,179	592.4
<b>Totals</b>				<b>1550</b>	<b>1,134,028</b>	<b>577,019</b>	<b>1,338,550</b>	<b>328.7 <sup>c</sup></b>

Notice a: Data available from Libyan a stock market in 30/09/2007.

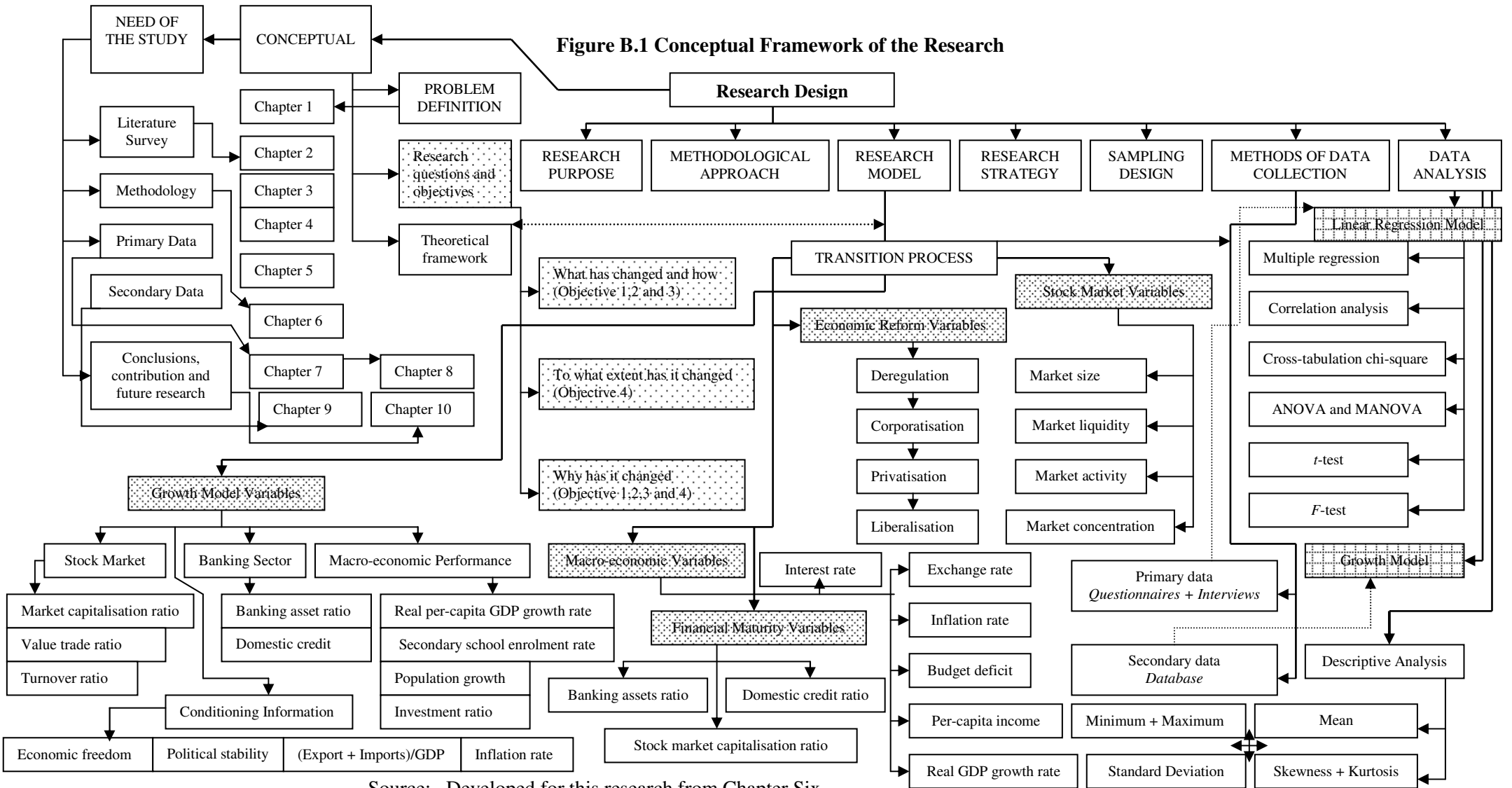
Notice b: N/A Not Applicable.

Notice c: Composite Index.

Source: Arab Monetary Fund, Arab Market Data Base (2008).

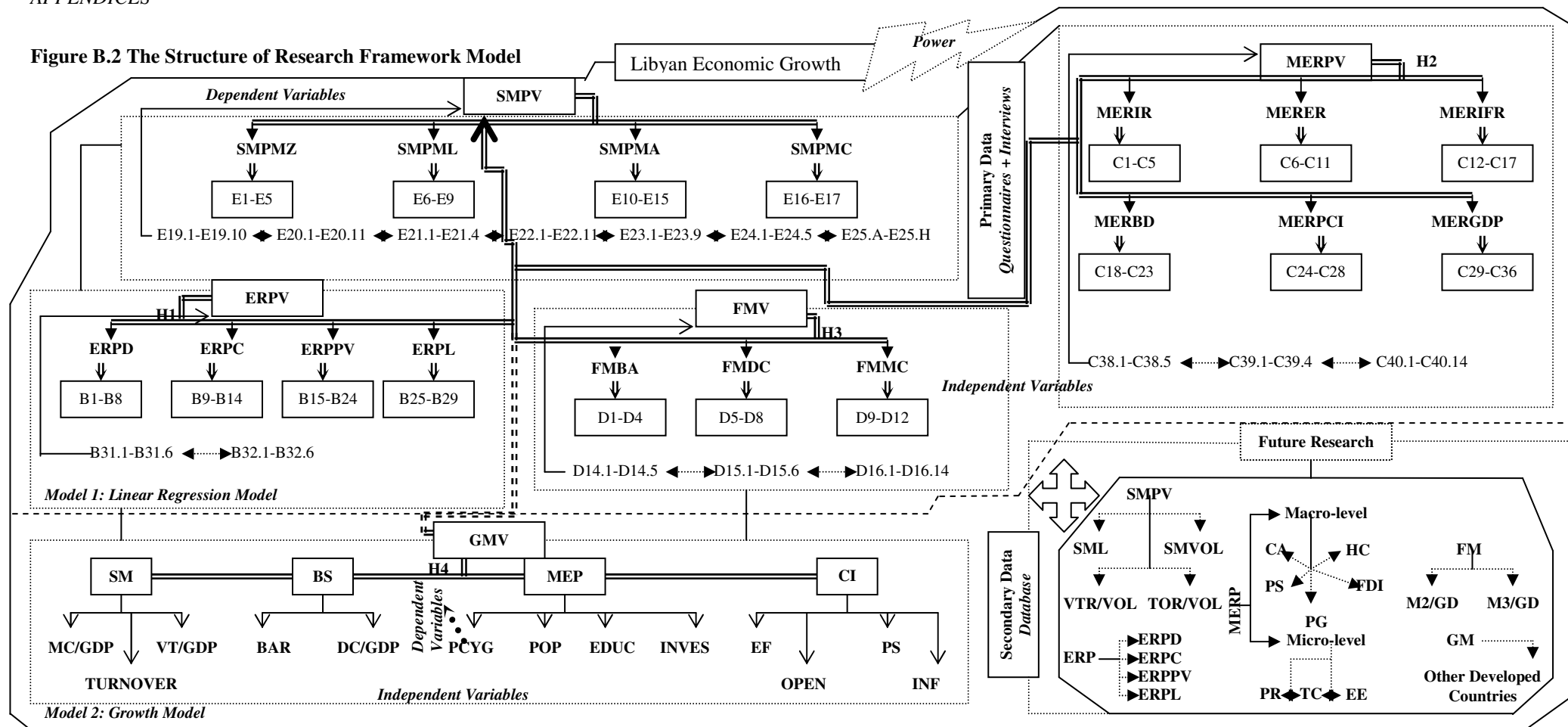
## Appendix B: Research Methodology Diagram

Figure B.1 Conceptual Framework of the Research



Source: Developed for this research from Chapter Six.

Figure B.2 The Structure of Research Framework Model



Notice a: Area 1 (SMPV) stock market performance variables including (SMPMZ) market size; (SMPML) market liquidity; (SMPMA) market activity; (SMPMC) market concentration . Area 2 (ERPV) economic reform programme variables including (ERPD) deregulation; (ERPC) corporatisation; (ERPPV) privatisation; (ERPL) liberalisation. Area 3 (MERPV) macro-economic reform variables including (MERIR) interest rate; (MERER) exchange rate; (MERIFR) inflation rate; (MERBD) budget deficit; (MERPCI) per-capita income; (MERGDP) GDP growth rate. Area 4 (FMV) financial maturity variables including (FMBA) banking assets ratio; (FMDC) domestic credit ratio; (FMMC) market capitalisation ratio. Area 5 (GMV) growth model including (SM) stock market variables MC/GDP market capitalisation ratio; VT/GDP value trade ratio; TURNOVER turnover ratio; BS banking sector variables BAR banking asset ratio; DC/GDP domestic credit ratio; (MEP) macro-economic; PCYG real per-capita GDP growth rate; POP population growth; EDUC secondary school enrolment rate; INVES investment ratio; CI conditioning information variables ER economic freedom; PS political stability; OPEN export + imports/GDP; INF inflation rate.

Notice b: Area 6 (Future Research) including (SMP) SML stock market liberalisation; SMVOL stock market volatility; VTR/VOL value traded ratio divided by volatility; TOR/VOL turnover ratio divided by volatility; (ERP) including ERPD deregulation; ERPC corporatisation; ERPPV privatisation; ERPL liberalisation; (MERP) including CA capital accumulation; HC human capital; PS private savings' rates; PG productivity growth; FDI foreign direct investment; PR profitability ratio; TC technical changes; EE economic efficiency; (GM) other developed countries transferable model such as Australia; Finland; France; Germany; Greece; Japan; Singapore; Spain; UK and US.

Notice c: H: testing research hypothesise.

## Appendix C: Covering Letter from the Researcher Sent with the Self-administered Questionnaires



University of  
**HUDDERSFIELD**

### LIBYA'S ECONOMIC REFORM PROGRAMME AND THE CASE FOR A STOCK MARKET QUESTIONNAIRE SURVEY

Dear Participant

I am a PhD candidate currently studying in the Business School of the University of Huddersfield, United Kingdom, conducting research into "*Libya's Economic Reform Programme and the Case for a Stock Market*".

#### ➤ Aim of Survey

The primary aim of this survey is to identify the most important factors that might affect the function of the Libyan stock market.

#### ➤ Non-Response to Questions

If you feel unable to answer any questions, please leave them blank or insert comments such as 'N/A' or 'Don't know'. If you wish to make additional comments at any point please feel free to do so either by using spare space on the questionnaire or by providing a covering note.

#### ➤ Outcome

All responses will be treated with the utmost confidence. The results of the survey will be used for research purposes only and no attempt will be made to identify an individual or organisation. I would very much appreciate your participation, since the success of this research depends upon your response.

#### ➤ Instructions

Please attempt to answer every question; there are no right or wrong answers. I am seeking your judgement or opinion only. The survey consists of 10 pages and should take no longer than 30 minutes to complete. I very much hope you will be able to participate and feel sure that you will find the subject matter interesting. Thank you very much for your help in advance. Please return the completed questionnaire in the addressed envelope provided.

I look forward to receiving your reply.

Sincerely yours,

Najeb Masoud

Business School  
University of Huddersfield  
HD1 3DH  
Telephone: 07757261306  
E-mail: [najeb2000@hotmail.com](mailto:najeb2000@hotmail.com)

Dr. John Cook

Director of Studies  
Business School  
Huddersfield University  
HD1 3DH  
Tel: +44 (0) 1484 472086  
E-mail: [j.a.cook@hud.ac.uk](mailto:j.a.cook@hud.ac.uk)

**Appendix D: Covering Letter from Researcher Sent with the Self-administered Questionnaires (in Arabic)**



University of  
**HUDDERSFIELD**

**LIBYA'S ECONOMIC REFORM PROGRAMME AND THE CASE FOR A  
STOCK MARKET**

برنامج الإصلاح الاقتصادي في ليبيا والحال بالنسبة لسوق الأوراق المالية

**QUESTIONNAIRE SURVEY**

استبانة الدراسة



أخي الكريم/ أختي الكريمة

السلام عليكم ورحمة الله وبركاته

أنا طالب دكتوراه في جامعة هدرزفيلد البريطانية، تخصص مالية في مجال الإصلاح الاقتصادي وتطور السوق المالي. يهدف هذا البحث بشكل أساسي لتعرف على برنامج الإصلاح الاقتصادي وتطور السوق المالي في ليبيا. ولإغراض إستكمال الدراسة الميدانية لهذا البحث، ستكون مجموعة من النتائج والتوصيات التي من شأنها إصلاح واستحداث المؤسسات المالية المصرفية وغير المالية بحيث تكون مؤثرة وفعالة في الاقتصاد الوطني. لقد تم اختيار هذا البحث لما له الدور الفعال الذي يلعبه في رفد الإقتصاد الليبي من جهة، وندرة الدراسات الميدانية في هذا المجال من جهة أخرى.

وحيث أن مشاركتكم في تعبئة الاستبيان المرفق يعد إثراء في إنجاح هذه الدراسة، نود من سعادتكم مشكورين بإعطاء هذه الاستبانة جزء من وقتكم القيم، علما بأن المعلومات الواردة في الاستبيان ستعامل بسرية تامة ولن تستخدم إلا لأغراض البحث العلمي.

شاكرين لكم سلفا صدق تعاونكم

نجيب محمد حمودة مسعود

Huddersfield University

Department of Business School

[Najeb2000@googlemail.com](mailto:Najeb2000@googlemail.com)

Telephone: 07757261306



**Appendix E: Covering Letter form Cultural Affairs the Libyan People's Bureau Sent with Self-administered Questionnaires in (Arabic)**

The People's Bureau  
of The Great Socialist  
People's Libyan Arab Jamahiriya  
London  
**Cultural Affairs**

إدارة العلاقات (الرابعة بين الشعوب) وليدات بين الحكومات



المنشعب الشعبي  
للجماهيرية العربية الليبية  
الشعبية الاشتراكية (الغضبي)  
لندن  
الشؤون الثقافية

التاريخ: الصيف / 2007  
المرفقات: —

الموضوع/ افــــادة

الى من يهمله الأمر

بعد التحية،،،

يفيد الملحق الثقافي الليبي في بريطانيا بأن الطالب/ نجيب محمد حمودة مسعود مبتعث من أمانه اللجنة الشعبية العامة للتعليم العالي، لتحضير درجة الدكتوراه من جامعة هدرزفيلد في مجال "الاقتصاد والاسواق المالية". وهو الآن بصدد القيام برحلة علمية الى ليبيا لتوزيع استثمارات الاستبانة الى المؤسسات المالية المصرفية والشركات وجمع المعلومات المطلوبة لموضوع بحثه. نأمل تقديم المساعدات الممكنة لتسهيل مهمة العلمية.

وقد صدرت هذه الافادة بناء على طلبية لتقديمها الى جهات الاختصاص.

والسلام عليكم ورحمة الله وبركاته،،،

الشؤون الثقافية  
المكتب الشعبي الليبي - لندن

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## Appendix F: Free Order Form



University of  
HUDDERSFIELD

**LIBYA'S ECONOMIC REFORM PROGRAMME AND THE CASE FOR A  
STOCK MARKET**

**FREE ORDER FORM QUESTIONNAIRE**

As a participant of this questionnaire, you are entitled to receive a free copy of the research findings. These should be of value to finance, in particular to those involved the economic reform programmes and the stock market. Your cooperation and participation in this research will be of great benefit, as the findings will:

- Enable better understanding of the economic reform programme and stock market performance currently supporting the Libyan economy.
- Enable comparison of supporting economic reform programme and stock market performance with other financial markets in both Libya and other countries.
- Enable better understanding of economic reform programmes and stock market performance, so that their impact upon finance and the economy may be strengthened in the future.

*If you are interested in obtaining a free copy of the result of this study, please complete your details here and attach this order form with the completed questionnaire.*

Name: .....(optional)

Title: .....

E-mail: .....

Address: .....

Thank you for your time and co-operation in completing this questionnaire.

## Appendix G: Economic Reform Programme and Stock Market Performance Questionnaires (Original in Design)

 <b>University of HUDDERSFIELD</b>	
<b>LIBYA'S ECONOMIC REFORM PROGRAMME AND THE CASE FOR A STOCK MARKET</b> برنامج الإصلاح الاقتصادي في ليبيا والحال بالنسبة لسوق الأوراق المالية <b>QUESTIONNAIRE SURVEY</b> استبانة الدراسة	
<b>Section A: Demographic</b>	
The purpose of this section is to collect general information about respondents and their financial institutions. Please tick (✓) the appropriate box for each the following questions.	
<b>القسم الأول : سكاني</b>	
الغرض من هذا القسم هو الحصول على المعلومات العامة عن المجيبين ومؤسساتهم المالية. يرجى وضع علامة (✓) في الخانة المناسبة في الاسئلة التالية	
<b>A.1 Your gender is:</b> <input type="checkbox"/> Male <input type="checkbox"/> Female	<b>س 1: ما جنسك</b> ذكر      أنثى
<b>A.2 Your age group is:</b> <input type="checkbox"/> Under 30 <input type="checkbox"/> 30-40 <input type="checkbox"/> 41-50 <input type="checkbox"/> 51-65	<b>س 2: ما هو عمرك</b> أقل من 30      30-40      41-50      51-65
<b>A.3 Your highest education level is:</b> <input type="checkbox"/> High school <input type="checkbox"/> College degree <input type="checkbox"/> Bachelor's degree <input type="checkbox"/> Master's degree <input type="checkbox"/> Doctorate      Other, please specify.....	<b>س 3: ما هو أعلى مستوى تعليميا تحصلت عليه</b> شهادة الثانوية العامة      دبلوم عالي      درجة البكالوريوس درجة الماجستير      درجة دكتوراه      أخرى، يرجى التحديد.....
<b>A.4 Your academic background:</b> <input type="checkbox"/> Accounting and finance <input type="checkbox"/> Economics <input type="checkbox"/> Business studies <input type="checkbox"/> <input type="checkbox"/> Money and banking <input type="checkbox"/> Management and marketing    Other, please specify...	<b>س 4: ما هو تخصصك الأكاديمي</b> المحاسبة والمالية      الاقتصاد      الدراسات التجارية      الأعمال المصرفية      إدارة التسويق أخرى، يرجى التحديد....
<b>A.5 Your current position:</b> <input type="checkbox"/> General manager <input type="checkbox"/> Senior manager <input type="checkbox"/> Administrative manager <input type="checkbox"/> Manager Employee <input type="checkbox"/> Public Relations manager    Other, please specify.....	<b>س 5: ما هو مركزك الوظيفي الحالي</b> المدير العام      مساعد مدير      المدير الإداري      مدير العلاقات العامة      مدير القوى العاملة أخرى، يرجى التحديد....
<b>A.6 What is your bank category:</b> <input type="checkbox"/> Central bank of Libya <input type="checkbox"/> Commercial bank <input type="checkbox"/> Foreign bank <input type="checkbox"/> <input type="checkbox"/> Investment bank <input type="checkbox"/> Private bank      Other, please specify.....	<b>س 6: ما هو البنك الذي تتعامل معه</b> مصرف ليبيا المركزي      مصرف ليبيا التجاري      بنك أجنبي بنك الاستثمار      المصرف الخاص      أخرى، يرجى التحديد....
<b>A.7 How many years work experience do you have:</b> <input type="checkbox"/> Less than 3 years <input type="checkbox"/> 3-6 years <input type="checkbox"/> 7 to 10 years <input type="checkbox"/> More than 10 years	<b>س 7: بشكل عام كم إجمالي عدد سنوات الخبرة في حياتك العملية</b> أقل من 3 سنوات    3-6 سنوات    7 إلى 10 سنوات    أكثر من 10 سنوات
<b>A.8 Number of employees:</b> <input type="checkbox"/> Less than 850 <input type="checkbox"/> Between 851-1340 <input type="checkbox"/> Between 1341-2105 <input type="checkbox"/> Between 2106-3210 <input type="checkbox"/> Over 3210	<b>س 8: كم يبلغ عدد الموظفين العاملين</b> أقل من 850      بين 851-1340      بين 1341-2105      بين 2106-3210      أكثر من 3210
<b>A.9 Which of the following type of shareholders best represents your company's majority ownership:</b> <input type="checkbox"/> Public company <input type="checkbox"/> Private company      Other, please specify .....	<b>س 9: إلى أي نوع من القطاعات التالية يمكن أن تصنف قطاع عام</b> قطاع خاص      أخرى، يرجى التحديد.....
<b>A.10 Your company's total assets (Millions LD):</b> <input type="checkbox"/> Low (Less than 10) <input type="checkbox"/> Medium (10-30) <input type="checkbox"/> High (More or = 30)	<b>س 10: كم تقدر إجمالي أصول الشركة (مليون دل)</b> صغيرة (أقل من 10)    متوسطة (10-30)    كبيرة (أكثر أو = 30)
<b>A.11 Your current market region:</b> <input type="checkbox"/> Local <input type="checkbox"/> Regional <input type="checkbox"/> Local and regional <input type="checkbox"/> International	<b>س 11: منطقة السوق الحالي الخاص بك</b> محلية      إقليمية      محلية وإقليمية      دولية

# APPENDICES

<b>A.12 Your industry:</b> <input type="checkbox"/> Manufacturing and mining <input type="checkbox"/> Trade <input type="checkbox"/> Energy, oil and gas <input type="checkbox"/> Communication and transport <input type="checkbox"/> Construction <input type="checkbox"/> Agriculture <input type="checkbox"/> Financial <input type="checkbox"/> Media <input type="checkbox"/> Service      Other, please specify...		<b>س 12: إلى أي نوع من القطاعات الصناعية يمكن أن تصنف مؤسستكم</b> الصناعة التحويلية والتعدين      التجارة      الطاقة، النفط والغاز الزراعة      المالية      وسائل الإعلام      الخدمات الاتصالات والنقل والبناء      أخرى، يرجى التحديد.....	
<b>A.13 What are the fiscal revenues attributed to business activities?</b> <input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High		<b>س 13: ما هي الإيرادات الضريبية التي نسبت إلى الانشطة التجارية؟</b> منخفضة      متوسطة      عالية	
<b>Section B: Economic Reform Programme</b> This section investigates the structural change caused by environmental conditions in the economic reform programme variables. The aim is to obtain information about the Libyan economic reform programme in the stock market structure.			
<b>القسم الثاني: برنامج الإصلاح الاقتصادي</b> هذا القسم يبحث في التغيير الهيكلي الناتج عن الظروف البيئية في متغيرات برنامج الإصلاح الاقتصادي. والهدف من ذلك هو الحصول على معلومات حول برنامج الإصلاح الاقتصادي الليبي في تركيبة هيكلية سوق أسهم الأوراق المالية.			
<b>Please tick the box that best reflects your answer where:</b> 1 = Strongly disagree      لا أوافق بشدة      2 = Disagree      لا أوافق      3 = Neither agree nor disagree      محايد      4 = Agree      أوافق      5 = Strongly agree      أوافق بشدة			
<b>Code</b>	<b>Statements</b>	<b>Score</b>	<b>البيانات</b>
<b>التشريعات</b> <b>Deregulation</b>			
<b>B.1</b>	Economic reform is an important factor in the regulation of the stock market	1 2 3 4 5	<b>B.1</b> الإصلاح الاقتصادي يشكل عاملا مهما في تنظيم سوق الأوراق المالية
<b>B.2</b>	Regulation of the stock market is good for investment	1 2 3 4 5	<b>B.2</b> تنظيم سوق الأوراق المالية أمر جيد للاستثمار
<b>B.3</b>	Regulation stability encourages companies to invest in the stock market	1 2 3 4 5	<b>B.3</b> يشجع استقرار التشريعات الشركات للاستثمار في سوق الأسهم المالية
<b>B.4</b>	The laws of the stock market help to promote investment in the capital market	1 2 3 4 5	<b>B.4</b> قوانين سوق الأسهم المالية قد تساعد في تعزيز الاستثمار في سوق المال
<b>B.5</b>	Regulation is an important element to market and promote investment for the stock market	1 2 3 4 5	<b>B.5</b> القوانين مهمة لتسويق وترويج الاستثمار في سوق الأسهم المالية
<b>B.6</b>	Regulation tools contribute to the improvement of the stock market	1 2 3 4 5	<b>B.6</b> تساهم الأدوات التشريعية المساهمة في تحسين سوق الأسهم المالية
<b>B.7</b>	The laws of the stock market play a crucial role in limiting the value of companies' shares	1 2 3 4 5	<b>B.7</b> قوانين سوق الأوراق المالية تلعب دورا حاسما في تحديد قيمة أسهم الشركات
<b>B.8</b>	Simplified procedures affect investment in the stock market	1 2 3 4 5	<b>B.8</b> تؤثر الإجراءات المبسطة على الاستثمار في سوق الأوراق المالية
<b>التشاريكات</b> <b>Corporatisation</b>			
<b>B.9</b>	Corporatisation is an important factor in a market-based economy	1 2 3 4 5	<b>B.9</b> التشاريكات تشكل عاملا مهما في اقتصاد قائم على السوق
<b>B.10</b>	The corporatisation of companies plays a vital role in contributing to the stock market	1 2 3 4 5	<b>B.10</b> التشاريكات جزء من الشركات والتي تلعب دورا حيويا في المساهمة في سوق الأوراق المالية
<b>B.11</b>	Public sector assigns laws for endorsing the investment in the stock market	1 2 3 4 5	<b>B.11</b> يخصص القطاع العام القوانين لتصديق على الاستثمار في سوق الأوراق المالية
<b>B.12</b>	The Libyan government encourages corporate companies to invest managers in the stock market	1 2 3 4 5	<b>B.12</b> الحكومة الليبية تشجع مدراء الشركات للاستثمار في سوق الأسهم المالية
<b>B.13</b>	Managers of corporate companies play a crucial role in encouraging prospective customers to invest in the market-based economy	1 2 3 4 5	<b>B.13</b> مدراء الشركات يلعبون دورا حاسما في تشجيع الزبائن المتوقعين للاستثمار في اقتصاد قائم على السوق
<b>B.14</b>	The following strategic targets are important for the future of the firm:		<b>B.14</b> إن الأهداف الإستراتيجية التالية مهمة لمستقبل الشركة:
<b>B.14.1</b>	Providing job opportunities	1 2 3 4 5	<b>B.14.1</b> توفير فرص عمل
<b>B.14.2</b>	Providing domestic market goods and services	1 2 3 4 5	<b>B.14.2</b> تزويد الأسواق المحلية بالسلع والخدمات
<b>B.14.3</b>	Increasing profitability	1 2 3 4 5	<b>B.14.3</b> زيادة الربحية
<b>B.14.4</b>	Repaying borrowing	1 2 3 4 5	<b>B.14.4</b> سداد الاقتراض
<b>B.14.5</b>	Expanding the firm	1 2 3 4 5	<b>B.14.5</b> توسع الشركة
<b>الخصخصة</b> <b>Privatisation</b>			
<b>B.15</b>	Private sector is important in strengthening the corporate market	1 2 3 4 5	<b>B.15</b> القطاع الخاص مهم في تعزيز سوق الشركات
<b>B.16</b>	Privatisation is a new term in the stock market	1 2 3 4 5	<b>B.16</b> الخصخصة هي اصطلاح جديد في سوق الأسهم المالية
<b>B.17</b>	Privatisation moves the Libyan economy towards a stock market	1 2 3 4 5	<b>B.17</b> الخصخصة تساعد انتقال الاقتصاد الليبي نحو اقتصاد سوق الأسهم المالية
<b>B.18</b>	Privatisation transforms the economy from a socialist to a market economy	1 2 3 4 5	<b>B.18</b> الخصخصة تحول الاقتصاد من اقتصاد اشتراكي إلى اقتصاد السوق
<b>B.19</b>	Privatisation of commercial banking sector	1 2 3 4 5	<b>B.19</b> خصخصة القطاع المصرفي التجاري
<b>B.20</b>	Your company encourages you to borrow money for a business deal as long as it is profitable	1 2 3 4 5	<b>B.20</b> شركتكم تشجّع على اقتراض الأموال لمصفقة تجارية، طالما انه مربح
<b>B.21</b>	The Libyan government motivates the private sector to invest in the stock market	1 2 3 4 5	<b>B.21</b> تحفز الحكومة الليبية القطاع الخاص للاستثمار في سوق الأسهم المالية
<b>B.22</b>	Privatisation is the real reason for contribution of productivity growth	1 2 3 4 5	<b>B.22</b> الخصخصة هي السبب الحقيقي للمساهمة في نمو معدل الإنتاج
<b>B.23</b>	Technology tools such as internet telecommunications are crucial in the privatised system	1 2 3 4 5	<b>B.23</b> أدوات تقنية التكنولوجيا مثل الانترنت والاتصالات السلكية واللاسلكية تشكل عاملا حاسما في نظام الخصخصة
<b>B.24</b>	The private sector can co-operate with stock market authorities to increase competitive advantages	1 2 3 4 5	<b>B.24</b> يمكن للقطاع الخاص أن يتعاون مع سلطات سوق الأوراق المالية لزيادة المزايا التنافسية
<b>التحرير</b> <b>Liberalisation</b>			
<b>B.25</b>	Liberalisation of trade and investment regimes as well as deregulation and privatisation of government business activities generate opportunities for expansion of trade investment and technology flows	1 2 3 4 5	<b>B.25</b> تحرير أنظمة الاستثمار والتجارة بالإضافة إلى إلغاء قيود التشريعات التنظيمية وخصخصة الفعاليات التجارية الحكومية يولدان فرص الاستثمار والتوسع التجاري وتنفق التقنية
<b>B.26</b>	Liberalisation restricts the movement of product and factor flows across borders involving goods, services,	1 2 3 4 5	<b>B.26</b> يحدّد التحرير حركة تدفق المنتجات وعوامل الإنتاج عبر الحدود التي تنطوي على تدفقات السلع والخدمات

# APPENDICES

	investment, financial capital, technology and labour						والاستثمار ورؤوس الأموال والتكنولوجيا والعمل	
B.27	Liberalisation has led to a lower cost of transactions and global business improvements in transport, communication and information technology networks	1	2	3	4	5	التحرير يؤدي إلى انخفاض تكلفة الصفقات وأجراء تحسينات في المعاملات التجارية العالمية في مجالات النقل وشبكات تقنية الاتصالات وتكنولوجيا المعلومات	B.27
B.28	Rapid liberalisation (dismantling and lowering of tariff/non-tariff barriers) and deregulation, both at national and international levels, aids trade	1	2	3	4	5	التحرير السريع يؤدي إلى (تفكيك وتخفيض التعريفه أو الحواجز غير الجمركية)، ورفع القيود على التشريعات التنظيمية على الصعيدين الوطني والدولي، والتجاري	B.28
B.29	Liberalisation may affect specific components of capital flows including debt (financial and non-financial borrowing, and lending), equity (portfolio) investment in stock markets), and foreign direct investment	1	2	3	4	5	التحرير قد يؤثر على مكونات محددة من تدفقات رؤوس الأموال بما في ذلك الديون (المالية وغير المالية على الاقتراض والإقراض) والإنصاف (المحفظة) الاستثمار في أسواق الأسهم)، والاستثمار الأجنبي المباشر	B.29
B.30	Other (Please specify)						أخرى، يرجى التحديد	B.30
B.31	Which of the following factors affect your firm's decisions about issuing shares?	1	2	3	4	5	إلى أي درجة من العوامل التالية تؤثر على قراراتك الحاسمة حول إصدار الأسهم؟	B.31
<p align="center"><b>Please tick the box that best reflects your answer where:</b> الرجاء وضع إشارة على الرقم الأكثر ملائمة</p> <p align="center">1 = Strongly disagree لا أوافق بشدة      2 = Disagree لا أوافق      3 = Neither agree nor disagree محايد      4 = Agree أوافق      5 = Strongly agree أوافق بشدة</p>								
Code	Statements	Score النتيجة					البيانات	رت
B.31.1	Product environment	1	2	3	4	5	حماية بيئة المنتج	B.31.1
B.31.2	Whether recent profits have been sufficient to fund activities	1	2	3	4	5	الأرباح الأخيرة كانت كافية لتمويل النشاطات	B.31.2
B.31.3	Shares are the cheapest source of funds	1	2	3	4	5	الأسهم أرخص مصدر الأموال	B.31.3
B.31.4	Shares are the least risky source of funds	1	2	3	4	5	الأسهم أقل مخاطرة لمصدر الأموال	B.31.4
B.31.5	Issuing shares gives investors a better impression of a firm's prospects than using debt	1	2	3	4	5	يعطي إصدار الأسهم المستثمرين انطباع راسخ عند احتمالات استخدام السحب	B.31.5
B.31.6	Fulfilling legal requirements regarding capital	1	2	3	4	5	الوفاء بالمتطلبات القانونية فيما يتعلق بالأسهم	B.31.6
B.31.7	Other (Please specify)						أخرى، يرجى التحديد	B.31.7
Please rank the following statements from 1 to 5, where 1 is the least important and 5 is very important, regarding your firm's decisions about issuing shares?								
<p align="center"><b>Please tick the box that best reflects your answer where:</b> الرجاء وضع إشارة على الرقم الأكثر ملائمة</p> <p align="center">1 = Strongly disagree لا أوافق بشدة      2 = Disagree لا أوافق      3 = Neither agree nor disagree محايد      4 = Agree أوافق      5 = Strongly agree أوافق بشدة</p>								
Code	Statements	Score النتيجة					البيانات	رت
B.32.1	To increase stock market efficiency and reduce wastage	1	2	3	4	5	لاستكمال كفاءة سوق الأوراق المالية وتقليل الفاقد	B.32.1
B.32.2	To maintain increased market share to satisfy customer perspective	1	2	3	4	5	للحفاظ على زيادة حصتها في السوق لإرضاء الزبائن المحتملين	B.32.2
B.32.3	To strengthen the relationship between public and private sector	1	2	3	4	5	لتعزيز العلاقة بين القطاعين العام والخاص	B.32.3
B.32.4	To add strength to the company's reputation	1	2	3	4	5	لإضافة القوة إلى سمعة الشركة	B.32.4
B.32.5	To improve stock market service quality	1	2	3	4	5	لتحسين نوعية خدمة سوق الأسهم المالية	B.32.5
B.32.6	To encourage quality awareness within stock markets	1	2	3	4	5	لتشجيع الوعي الممتاز ضمن أسواق الأسهم المالية	B.32.6
B.32.7	Other (Please specify)						أخرى، يرجى التحديد	B.32.7
Section C: Macro-economic Reform								
The purpose of this section is to test for structural change in environmental conditions in macro-economic reform factors. Please give your opinion about the macro-economic reform activities in financial market performance.								
الغرض من هذا القسم هو اختبار العوامل التي تؤثر في التغيير الهيكلي في الظروف البيئية على أداء متغيرات الإصلاح الاقتصادي الكلي. الرجاء إعطاء رأيك حول نشاطات إصلاح الاقتصاد الكلي في أداء السوق المالية.								
<p align="center"><b>Please tick the box that best reflects your answer where:</b> الرجاء وضع إشارة على الرقم الأكثر ملائمة</p> <p align="center">1 = Strongly disagree لا أوافق بشدة      2 = Disagree لا أوافق      3 = Neither agree nor disagree محايد      4 = Agree أوافق      5 = Strongly agree أوافق بشدة</p>								
Code	Statements	Score النتيجة					البيانات	رت
Interest Rates								
C.1	The policy of interest rate	1	2	3	4	5	سياسة سعر الفائدة	C.1
C.2	When interest rates increase, the required rates of return will increase, then stock prices will decrease	1	2	3	4	5	عند زيادة سعر الفائدة فإن معدل العائد المطلوب سيزداد و من ثم ستخف أسعار الأسهم	C.2
C.3	Interest rates affect the stock market	1	2	3	4	5	يؤثر سعر الفائدة على سوق الأسهم المالية	C.3
C.4	The flow of money depends upon the interest rates either to the stock market or the banking sector	1	2	3	4	5	تدفق الأموال يتوقف على أسعار الفائدة أما على سوق الأسهم المالية أو القطاع المصرفي	C.4
C.5	Interest rate Liberalisation	1	2	3	4	5	تحرير سعر الفائدة	C.5

## APPENDICES

أسعار الصرف									
C.6	لا توجد سياسات نقدية واضحة بالنسبة لسياسة أسعار الصرف	1	2	3	4	5	C.6	There are no distinct monetary policies in relation to the exchange rate policy	
C.7	الحركة في سعر الصرف قد يغير مطلب المستثمرين الأجانب لأسعار الأسهم المحلية بالمقارنة مع بلدان أخرى	1	2	3	4	5	C.7	The movement in exchange rate may alter foreign investors' demand for domestic stock prices compared to other countries	
C.8	من المهم تخفيض التقلبات بين العملة المحلية والأجنبية	1	2	3	4	5	C.8	It is important to reduce fluctuations between domestic and foreign currency	
C.9	سعر الصرف قد يغير الاستثمار في سوق العملات المحلي بالمقارنة مع الأسواق الأخرى	1	2	3	4	5	C.9	The exchange rate may influence investment in the local currency market compared with other markets	
C.10	تقلبات سعر الصرف لها التأثيرات على أسعار الأسهم	1	2	3	4	5	C.10	Exchange rate fluctuations have influence upon the stock prices	
C.11	يلعب سعر الصرف دورا حيويا للاستثمار في سوق الأسهم المالية	1	2	3	4	5	C.11	The exchange rate plays a vital role in investing in the stock market	
التضخم									
C.12	عندما يرتفع معدل التضخم فإن أسعار الأسهم تنخفض بسبب تأثير طريقة الكلفة التاريخية للتلف والنظام الضريبي من مكاسب رأس المال الاسمي	1	2	3	4	5	C.12	When the rate of inflation rises, stock prices fall due to the effect of inflation on the historic cost method of depreciation and taxation of nominal capital gains	
C.13	أي زيادة في معدل التضخم تحول العائدات الحقيقية المتوقعة إلى المستثمرين من حصة الأسهم	1	2	3	4	5	C.13	Any increase in the inflation rate reduces the expected real returns to investors from holding stocks	
C.14	معدل التضخم يؤثر بقوة على الحياة الاجتماعية	1	2	3	4	5	C.14	The inflation rate impacts strongly on social life	
C.15	التضخم يزيد من أسعار السلع والخدمات	1	2	3	4	5	C.15	Inflation increases the price of goods and services	
C.16	التضخم يؤدي إلى انخفاض قيمة العملة	1	2	3	4	5	C.16	Inflation decreases currency value	
C.17	يسبب التضخم في زيادة العمالة والحد من فرص العمل	1	2	3	4	5	C.17	Inflation causes unemployment and reduction of job opportunities	
العجز في الموازنة العامة									
C.18	العجز في الميزانية يعبر عن الزيادة في الإنفاق الحكومي على مر الزمن	1	2	3	4	5	C.18	Budget deficit is considered to be the excess of government expenditure over time	
C.19	خفض العجز في الميزانية يؤدي إلى التغلب على مشاكل البطالة	1	2	3	4	5	C.19	Reducing the budget deficit overcomes unemployment problems	
C.20	يمنع العجز في الميزانية زيادة الموارد العامة	1	2	3	4	5	C.20	Budget deficit prohibits the increase of public resources	
C.21	عجز الموازنة العامة يمكن أن يؤدي إلى زيادة معدلات التضخم وأسعار الفائدة	1	2	3	4	5	C.21	Budget deficit can lead to increased inflation and interest rates	
C.22	انخفاض قيمة العجز في الموازنة العامة يخفض الإنفاق الحكومي	1	2	3	4	5	C.22	A low value in budget deficit reduces government spending	
C.23	استغلال أدوات القطاع الخاص والتي تساهم في تخفيض العجز في الميزانية	1	2	3	4	5	C.23	The exploitation of private sector tools contributes to reduction of the budget deficit	
نصيب الفرد من الدخل									
C.24	نصيب الفرد من الدخل يمكن أن ينعكس على تطوير الاقتصاد الليبي	1	2	3	4	5	C.24	Per-capita income can be reflected in development of the Libyan economy	
C.25	نصيب الفرد من الدخل يمثل إحدى القوى الدافعة نحو سوق الأسهم المالية	1	2	3	4	5	C.25	Per-capita income is one of the driving forces towards a stock market	
C.26	مؤشر التنمية البشرية يؤثر بقوة على معدل دخل الفرد	1	2	3	4	5	C.26	The human development index is strongly affected by per capita income	
C.27	متوسط الدخل الفردي للأفراد يعتمد على النمو السكاني	1	2	3	4	5	C.27	The per-capita income of individuals depends upon population growth	
C.28	الانضباط المالي يحدد نصيب الفرد من الدخل التي تستوفي من معدل نمو الناتج المحلي الإجمالي	1	2	3	4	5	C.28	Fiscal discipline determines the per-capita income that satisfies GDP growth rate	
الناتج المحلي الإجمالي									
C.29	ارتفاع نمو الناتج المحلي الإجمالي يؤدي إلى زيادة التدفقات النقدية في الشركات	1	2	3	4	5	C.29	Higher GDP growth leads to increase in companies' cash flows	
C.30	معدل نمو الناتج المحلي الإجمالي الحقيقي أمر ضروري لزيادة الناتج	1	2	3	4	5	C.30	Real GDP growth rate is necessary to increase output	
C.31	عند زيادة نصيب الفرد من الناتج المحلي الإجمالي فإن الاقتصاد الليبي يجب أن يكون تنافسي في سوق الأسهم المالية	1	2	3	4	5	C.31	When increasing the per-capita of GDP, the Libyan economy must be competitive in the stock market	
C.32	هناك أسباب قوية لزيادة معدل النمو في تجارة الصادرات والواردات	1	2	3	4	5	C.32	There is a strong growth rate in export and import trade	
C.33	أسعار النفط تؤثر على الناتج المحلي الإجمالي في سوق الأسهم المالية	1	2	3	4	5	C.33	Oil prices impact on GDP of the stock market	
C.34	التحسينات الجديدة والمتنوعة للمنتجات والسلع والخدمات تؤدي إلى ارتفاع في معدل نمو الاقتصاد	1	2	3	4	5	C.34	New improved and varied products, goods and services which increased in the economic growth rate	
C.35	النمو في الناتج المحلي الإجمالي يخفض البطالة	1	2	3	4	5	C.35	Growth in GDP reduces unemployment	
C.36	عائد الاستثمار هو ارتفاع معدل النمو في الاقتصاد	1	2	3	4	5	C.36	Investment return growth is high in their economy	
C.37	أخرى، يرجى التحديد						C.37	Other (Please specify)	
C.38	في رأيك، إلى أي العوامل التالية تساهم بالزيادة أو النقصان في معدل النمو الاقتصادي؟	To what extent do you think each of the following statements increase/ decrease the contribution of factors to economic growth rate?					C.38		
الرجاء وضع إشارة على الرقم الأكثر ملائمة									
أوافق بشدة 5 = Strongly agree    أوافق 4 = Agree    محايد 3 = Neither agree nor disagree    لا أوافق 2 = Disagree    لا أوافق بشدة 1 = Strongly disagree									
Code	البيانات	النتيجة					Score	Statements	رَبت
C.38.1	نمو الإنتاج	1	2	3	4	5	C.38.1	Growth of output	
C.38.2	مساهمة رأس المال البشري	1	2	3	4	5	C.38.2	Contribution of human capital	
C.38.3	مساهمة رأس المال	1	2	3	4	5	C.38.3	Contribution of capital	

# APPENDICES

C.38.4	Contribution of labour	1	2	3	4	5	C.38.4	مساهمة العمالة
C.38.5	Total factor productivity growth (TFP)	1	2	3	4	5	C.38.5	نمو الإنتاجية الكلية لعوامل الإنتاج
C.38.6	Other (Please specify)						C.38.6	أخرى، يرجى التحديد
C.39	When undertaking any form of business activity, how concerned are you about each of the financial risks refer to financial events as following, which are capable of causing harm to firms? عند القيام بأي شكل من أشكال النشاط الاقتصادي، كيف يمكنك معينة كل من المخاطر المالية التي تشير إلى الأحداث المالية على النحو التالي، والتي تسبب في إغقة أداء الشركات؟						C.39	
Please tick the box that best reflects your answer where : الرجاء وضع إشارة على الرقم الأكثر ملائمة								
1 = Un concerned غير مهتم 2 = Slightly concerned مهم قليلا 3 = Moderately concerned مهم 4 = Very concerned مهم جدا 5 = Extremely concerned مهم على الإطلاق								
Code	Statements	Score النتيجة					البيانات	رت
C.39.1	Interest rates	1	2	3	4	5	C.39.1	أسعار الفائدة
C.39.2	Foreign rates	1	2	3	4	5	C.39.2	المعدلات الأجنبية
C.39.3	Commodity prices	1	2	3	4	5	C.39.3	أسعار السلع
C.39.4	Indirect instruments of monetary policy	1	2	3	4	5	C.39.4	أدوات السياسة النقدية الغير مباشرة
C.39.5	Other (Please specify)						C.39.5	أخرى، يرجى التحديد
C.40	Please rank the following statements there are several problematic issues/ obstacles factors which might influence doing business with Libya as a country/ economy and to rank from 1 to 5, where 1 represents no obstacles and 5 major obstacles. Please answer these questions by selecting the option that you think best reflects your opinion. هناك عدة مشاكل أو عقبات والتي قد تؤثر في إبرام الصفقات التجارية مع الاقتصاد الليبي. الرجاء اختيار أفضل الاجابه عن هذه الأسئلة عن طريق الترتيب من 1 إلى 5، حيث 1 لا عقبات و5 عقبات الرئيسية.						C.40	
Please tick the box that best reflects your answer where: الرجاء وضع إشارة على الرقم الأكثر ملائمة								
1 = No obstacle لا توجد عقية 2 = Minor obstacle عقية بسيطة 3 = Moderate obstacle عقية معتدلة 4 = Obstacle عقية 5 = Major obstacle عقية كبيرة								
Code	Statements	Score النتيجة					البيانات	رت
C.40.1	Policy instability	1	2	3	4	5	C.40.1	عدم استقرار السياسة
C.40.2	Inefficient government bureaucracy	1	2	3	4	5	C.40.2	عدم كفاءة الحكومة البيروقراطية
C.40.3	Restrictive labour regulations	1	2	3	4	5	C.40.3	التقييد في التشريعات التنظيمية للعمالة
C.40.4	Inadequate supply of infrastructure	1	2	3	4	5	C.40.4	عدم كفاية الإمدادات من البنية التحتية
C.40.5	Inadequately educated workforce	1	2	3	4	5	C.40.5	نقص في القوى العاملة المتعلمة
C.40.6	Corruption	1	2	3	4	5	C.40.6	الفساد (الإداري أو الاقتصادي أو المالي)
C.40.7	Foreign currency regulations	1	2	3	4	5	C.40.7	أنظمة العملة الأجنبية
C.40.8	Poor work ethic of national labour force	1	2	3	4	5	C.40.8	ضعف أخلاقيات العمل في قوة العمل الوطنية
C.40.9	Government instability/coups	1	2	3	4	5	C.40.9	عدم الاستقرار الحكومي/الانقلابات
C.40.10	Tax regulation	1	2	3	4	5	C.40.10	التشريعات الضريبية
C.40.11	Crime and theft	1	2	3	4	5	C.40.11	الجريمة والسرقة
C.40.12	Tax rates	1	2	3	4	5	C.40.12	المعدلات الضريبية
C.40.13	Access to financing	1	2	3	4	5	C.40.13	الحصول على التمويل
C.40.14	Voice and Accountability	1	2	3	4	5	C.40.14	المشاركة والمساءلة
C.40.15	Other (Please specify)						C.40.15	أخرى، يرجى التحديد
Section D: Financial Maturity القسم الرابع: النضج المالي								
This section aims to examine the change in financial maturity factors which link stock markets, banks and corporate financing decisions with an understanding of the relationship between financial patterns and economic growth rate. يهدف هذا القسم لدراسة التغيير في النضج المالي بناء على العوامل التي تربط بين أسواق الأوراق المالية والمصارف والشركات التي تمول القرارات بفهم العلاقة بين الأنماط المالية ومعدل النمو الاقتصادي.								
Please tick the box that best reflects your answer where: الرجاء وضع إشارة على الرقم الأكثر ملائمة								
1 = Strongly disagree لا أوافق بشدة 2 = Disagree لا أوافق 3 = Neither agree nor disagree محايد 4 = Agree أوافق 5 = Strongly agree أوافق بشدة								
Code	Statements	Score النتيجة					البيانات	رت
Banking Assets Ratio of GDP نسبة الأصول المصرفية من الناتج المحلي الإجمالي								
D.1	Deposit money bank assets/total banking sector assets	1	2	3	4	5	D.1	إيداع أصول أموال المصارف إلى مجموع أصول القطاع المصرفي
D.2	Banking assets of GDP can improve growth rate in the stock market	1	2	3	4	5	D.2	الأصول المصرفية للناتج المحلي الإجمالي يمكن أن تحسن معدل النمو في سوق الأسهم المالية
D.3	Financial intermediaries get larger measured by total assets relative to GDP	1	2	3	4	5	D.3	يقاس الوسطاء الماليون بكم أكبر مجموع الأصول إلى الناتج المحلي الإجمالي
D.4	The low ratio of broad money to GDP indicates low monetary depth of the economy	1	2	3	4	5	D.4	انخفاض نسبة النقود بمعناها الواسع إلى الناتج المحلي الإجمالي تشير إلى انخفاض النقد في عمق الاقتصاد.

# APPENDICES

Domestic Credit Ratio of GDP										نسبة لائتمان المحلي من الناتج المحلي الإجمالي																																							
D.5	There is limited access to loans and credit facilities									1	2	3	4	5	هناك محدودية فرص الحصول على القروض والتسهيلات الائتمانية					D.5																													
D.6	Have you experienced any of the following problems?									1	2	3	4	5	هل لك تجربة مع المشاكل التالية؟					D.6																													
D.6.1	Loan application rejected									1	2	3	4	5	رفض طلب القرض					D.6.1																													
D.6.2	Charges too high									1	2	3	4	5	رسوم عالية جدا					D.6.2																													
D.6.3	Relationship difficulties									1	2	3	4	5	صعوبة في العلاقة					D.6.3																													
D.6.4	Bank errors									1	2	3	4	5	أخطاء البنك					D.6.4																													
D.6.5	Red tape (Bureaucracy)									1	2	3	4	5	الروتين (البيروقراطية)					D.6.5																													
D.6.6	Interest rates too high									1	2	3	4	5	سعر فائدة عالي جدا					D.6.6																													
D.7	Domestic credit of GDP is one of the measurements of financial maturity of the stock market systems									1	2	3	4	5	الائتمان المحلي من الناتج المحلي الإجمالي أحد مقاييس النضج المالي لأنظمة سوق الأسهم المالي					D.7																													
D.8	Domestic credit of GDP ability is considered to represent financial maturity in the stock market									1	2	3	4	5	الائتمان المحلي من الناتج المحلي الإجمالي يعبر عن قدرة النضج المالي في سوق الأسهم					D.8																													
Stock Market Capitalisation Ratio of GDP										نسبة القيمة السوقية الى الناتج المحلي الإجمالي																																							
D.9	Stock market capitalisation of GDP represents one aspect of financial maturity in the market-based economy									1	2	3	4	5	تمثل رسملة سوق الأسهم المالية من الناتج المحلي الإجمالي واحد من سمة النضج المالي في اقتصاد قائم على السوق					D.9																													
D.10	Stock market capitalisation of GDP increases investment in the stock market									1	2	3	4	5	تزيد رسملة سوق الأسهم المالية من الناتج المحلي الإجمالي استثمار في سوق الأسهم المالية					D.10																													
D.11	Stock markets become larger, as measured by market capitalisation relative to GDP									1	2	3	4	5	أسواق الأسهم تصبح أكبر، إذا ما قيس من قبل نسبة رسملة السوق إلى الناتج المحلي الإجمالي					D.11																													
D.12	Independence of the central bank									1	2	3	4	5	استقلال المصرف المركزي					D.12																													
D.13	Other (Please specify)									أخرى، يرجى التحديد										D.13																													
D.14	What source(s) of finance does your firm use?									ما مصدر الاموال الذي تستخدمها شركتكم؟										D.14																													
Please tick the box that best reflects your answer where:										الرجاء وضع إشارة على الرقم الأكثر ملائمة																																							
1= Not used لم يستخدم										2= Used with no success تم استخدامه بدون نجاح										3= Used with a moderate degree of success تم استخدامه بنجاح متوسط										4= Used with a great deal of success تم استخدامه بنجاح كبير																			
Code	Statements									Score النتيجة					البيانات					رت																													
D.14.1	Bank loans									1	2	3	4	5	القروض المصرفية					D.14.1																													
D.14.2	Retained earning									1	2	3	4	5	اعادة تشغيل الربح					D.14.2																													
D.14.3	Trade credit (supplies)									1	2	3	4	5	الائتمان التجاري (العرض)					D.14.3																													
D.14.4	Government subsidies									1	2	3	4	5	الإعانات الحكومية					D.14.4																													
D.14.5	Foreign sources									1	2	3	4	5	المصادر الأجنبية					D.14.5																													
D.14.6	Other (Please specify)									أخرى، يرجى التحديد										D.14.6																													
D.15	How often during a year does your firm follow its target stock market when financing its investment?									كم مرة خلال السنة شركتك تهدف لمتابعة سوق الأسهم عند تمويل استثماراتها؟										D.15																													
Please tick all those that apply:										يرجى وضع علامة أمام كل ما ينطبق:																																							
Code	√	Statements									البيانات					رت																																	
D.15.1		Never									أبد					D.15.1																																	
D.15.2		Rarely (once per year)									نادرا (مرة في السنة)					D.15.2																																	
D.15.3		Often (twice per year)									في أغلب الأحيان (مرتين في السنة)					D.15.3																																	
D.15.4		Very often (approximately every three months)									في أغلب الأحيان (كل ثلاثة أشهر)					D.15.4																																	
D.15.5		Systematically (approximately every month)									بانتظام (كل شهر تقريبا)					D.15.5																																	
D.15.6		During the analysis of each investment project									أثناء تحليل كل مشروع استثماري					D.15.6																																	
D.15.7		Other (Please specify)									أخرى، يرجى التحديد					D.15.7																																	
Please tick the box that best reflects your answer where:										الرجاء وضع إشارة على الرقم الأكثر ملائمة																																							
1= Very unimportant جدا غير مهمة										2= Unimportant غير مهمة										3= Uncertain غير متأكد										4= Important مهمة										5= Very important مهمة جدا									
Code	Statements									Bank-Based القاعدة المصرفية					Market-Based القاعدة السوقية					البيانات					رت																								
D.16.1	Mobilising saving									1	2	3	4	5	1	2	3	4	5	تعبئة الادخار					D.16.1																								
D.16.2	Identifying good investment									1	2	3	4	5	1	2	3	4	5	تحديد جيد للاستثمار					D.16.2																								



# APPENDICES

D.16.3	Allocating capital	1	2	3	4	5	1	2	3	4	5	تخصيص الرأسمال	D.16.3
D.16.4	Providing risk management tools	1	2	3	4	5	1	2	3	4	5	توفير أدوات لإدارة المخاطر	D.16.4
D.16.5	Exerting sound corporate control	1	2	3	4	5	1	2	3	4	5	ممارسة سليمة لمرافقة الشركات	D.16.5
D.16.6	Justifying problems associated with excessively powerful banks	1	2	3	4	5	1	2	3	4	5	تبرير المشاكل المفرطة والمرتبطة بالسلطة المصرفية	D.16.6
D.16.7	Increasing transparency and accountability	1	2	3	4	5	1	2	3	4	5	زيادة الشفافية والمساءلة	D.16.7
D.16.8	Structure activity	1	2	3	4	5	1	2	3	4	5	هيكل النشاط	D.16.8
D.16.9	Structure size	1	2	3	4	5	1	2	3	4	5	هيكل الحجم	D.16.9
D.16.10	Structure efficiency	1	2	3	4	5	1	2	3	4	5	هيكل الكفاءة	D.16.10
D.16.11	Structure regulatory	1	2	3	4	5	1	2	3	4	5	الهيكل التنظيمي	D.16.11
D.16.12	Finance activity	1	2	3	4	5	1	2	3	4	5	تمويل النشاط	D.16.12
D.16.13	Finance size	1	2	3	4	5	1	2	3	4	5	حجم التمويل	D.16.13
D.16.14	Finance efficiency	1	2	3	4	5	1	2	3	4	5	الكفاءة المالية	D.16.14
D.16.15	Other (Please specify)	1	2	3	4	5	1	2	3	4	5	أخرى، يرجى التحديد	D.16.15

Section E: Stock Market Performance												القسم الخامس : أداء سوق الأوراق المالية	
This section aims to examine the change in stock market performance variables after the introduction of the economic reform programme.												يهدف هذا القسم إلى دراسة تأثير متغيرات أداء سوق الأسهم على برنامج الإصلاح الاقتصادي.	
Please tick the box that best reflects your answer where: الرجاء وضع إشارة على الرقم الأكثر ملاءمة 1 = Strongly disagree لا أوافق بشدة    2 = Disagree لا أوافق    3 = Neither agree nor disagree محايد    4 = Agree أوافق    5 = Strongly agree أوافق بشدة													
Code	Statements	Score	النتيجة	البيانات	رت								
<b>Market Size</b>													
E.1	Market capitalisation is considered to be a measure of market size in the stock market	1	2	3	4	5	سوق كفاية رأس المال يعتبر بمثابة أداة من حجم السوق في سوق الأوراق المالية	E.1					
E.2	Market capitalisation is a percentage of GDP in the stock market	1	2	3	4	5	سوق كفاية رأس المال كنسبة مئوية من الناتج المحلي الإجمالي في سوق الأسهم المالية	E.2					
E.3	The number of listed companies is an important factor for determining market size	1	2	3	4	5	عدد الشركات المدرجة تمثل عامل هام لتحديد حجم السوق	E.3					
E.4	The volume of shares listed enhances the stock market size	1	2	3	4	5	حجم الأسهم المدرجة في السوق تعزز من حجم السوق في سوق الأوراق المالية	E.4					
E.5	The number of financial intermediaries increases the market size in the stock market	1	2	3	4	5	عدد مؤسسات الوساطة المالية يزيد من حجم السوق في سوق الأوراق المالية	E.5					
<b>Market Liquidity</b>													
E.6	The total value-traded in market capitalisation contributes to viability and accessibility of the stock market	1	2	3	4	5	إجمالي القيمة المتداولة في رسملة السوق تساهم في ضمان الاستمرارية وإمكانية الوصول إلى سوق الأسهم المالية	E.6					
E.7	The ratio of total value-traded to GDP impacts on the stock market	1	2	3	4	5	النسبة من إجمالي القيمة المتداولة إلى الناتج المحلي الإجمالي لها تأثيرات على سوق الأسهم المالية	E.7					
E.8	The ratio of total value-traded shares helps in increasing volume of shares listed of market liquidity in the stock market	1	2	3	4	5	النسبة من إجمالي قيمة الأسهم المتداولة يساعد في زيادة حجم الأسهم المدرجة في السوق ذات السيولة في سوق الأسهم المالية	E.8					
E.9	Turnover ratios are indicators of the market's ability to trade significant positions	1	2	3	4	5	نسب الدوران تعد مؤشر مهم للحكم على قدرة السوق للمتجارة	E.9					
<b>Market Activity</b>													
E.10	The value of trade is part of market activity	1	2	3	4	5	قيمة التجارة هي جزء من نشاط السوق	E.10					
E.11	Volume of trade plays an important role in the stock market	1	2	3	4	5	يلعب حجم التجارة دورا مهما في سوق الأسهم المالية	E.11					
E.12	A number of transitions are considered to be market activities that affect the stock market	1	2	3	4	5	عدد من التحولات تعبر عن نشاطات السوق التي تؤثر على سوق الأسهم المالية	E.12					
E.13	The increased number of traded companies increases market activities in the stock market	1	2	3	4	5	ازدياد عدد الشركات المتداولة في السوق تزيد من نشاطات السوق في سوق الأسهم المالية	E.13					
E.14	The increased value of new issues, including capital, generates market activities in the stock market	1	2	3	4	5	القيمة المتزايدة من الإصدارات الجديدة، بما في ذلك رأس المال تولد نشاطات للسوق في سوق الأسهم المالية	E.14					
E.15	The value of new issues acts as a percentage of GDP in the stock market	1	2	3	4	5	القيمة الجديدة من الإصدارات فعالة كنسبة مئوية من الناتج المحلي الإجمالي في سوق الأسهم المالية	E.15					
<b>Market Concentration</b>													
E.16	The percentage of the largest company's share in market capitalisation increases market capitalisation share in the stock market	1	2	3	4	5	النسبة المئوية من أسهم الشركات الكبرى لها حصة في رسملة السوق والتي تزيد من حصة أسهم رسملة السوق في سوق الأسهم المالية	E.16					
E.17	The percentage of largest companies affects the value traded in the stock market	1	2	3	4	5	النسبة المئوية في الشركات الكبرى تؤثر على القيمة المتداولة في سوق الأوراق المالية	E.17					
E.18	Other (Please specify)						أخرى، يرجى التحديد	E.18					

# APPENDICES

E.19	For the following statements, please indicate to what degree they would encourage the successful establishment of a stock market in the Libyan economy.	من خلال البيانات التالية، يرجى الإشارة إلى أي درجة أنها تشجع علي نجاح إنشاء سوق الأوراق المالية.										E.19
Please tick the box that best reflects your answer where:												
<div> <div>1 = Strongly disagree لا أوافق بشدة</div> <div>2 = Disagree لا أوافق</div> <div>3 = Neither agree nor disagree محايد</div> <div>4 = Agree أوافق</div> <div>5 = Strongly agree أوافق بشدة</div> </div>												
Code	Statements	Score	النتيجة					البيانات			رت	
E.19.1	Lack of quality companies	1 2 3 4 5						ضعف جودة الشركات			E.19.1	
E.19.2	Lack of collateral (security)	1 2 3 4 5						الافتقار إلى ضمانات (أمنية)			E.19.2	
E.19.3	Lack of good trading record	1 2 3 4 5						الافتقار إلى السجل التجاري الجيد			E.19.3	
E.19.4	Provide a new technology as the market needs	1 2 3 4 5						توفر تقنية حديثة حسب حاجة السوق			E.19.4	
E.19.5	Poor relationships with banks	1 2 3 4 5						ضعف العلاقات مع البنوك			E.19.5	
E.19.6	Geographical location	1 2 3 4 5						الموقع الجغرافي			E.19.6	
E.19.7	Deterioration in the state of the economy	1 2 3 4 5						تدهور حالة الاقتصاد			E.19.7	
E.19.8	The suppliers of finance are in small and/or underdeveloped sector	1 2 3 4 5						حصة الموردين الماليين قد تكون صغيرة أو غير متطورة القطاع			E.19.8	
E.19.9	Proximity to international markets	1 2 3 4 5						القرب من الأسواق الدولية			E.19.9	
E.19.10	Inability to convince lenders of profitability of the investments	1 2 3 4 5						عدم القدرة على إقناع المقرضين من ربحية الاستثمارات			E.19.10	
E.19.11	Other (Please specify)						أخرى، يرجى التحديد					E.19.11
E.20	In the process of gathering information about the corporation in which the stock market operates, different sources of information are available for companies. From the following information sources, could you rate the importance of each source to the stock market effects?										E.20	
عند القيام بعملية تقييم عمليات السوق المالي عادة تلجا الشركة إلى عدة مصادر للمعلومات من ضمن مصادر المعلومات أدناه الرجاء تحديد مدى أهمية كل من المصادر أدناه لعملية تقييم السوق المالي؟												
Please tick the box that best reflects your answer where:												
<div> <div>1= Very unimportant جدا غير مهمة</div> <div>2= Unimportant غير مهمة</div> <div>3= Uncertain غير متأكد</div> <div>4= Important مهمة</div> <div>5= Very important مهمة جدا</div> </div>												
Code	Statements	Score	النتيجة					البيانات			رت	
E.20.1	Companies' personnel at headquarters	1 2 3 4 5						موظفي الشركة في الإدارة العامة			E.20.1	
E.20.2	Companies' personnel abroad	1 2 3 4 5						موظفي الشركة في الفروع			E.20.2	
E.20.3	Banks operating locally and abroad	1 2 3 4 5						البنوك العاملة محليا وخارجيا			E.20.3	
E.20.4	Other companies operating locally and abroad	1 2 3 4 5						الشركات العاملة محليا وخارجيا			E.20.4	
E.20.5	Media (e.g. television, radio, newspapers)	1 2 3 4 5						وسائل الاعلام (مثل التلفزيون والإذاعة والصحف			E.20.5	
E.20.6	Trade associations	1 2 3 4 5						الاتحادات التجارية			E.20.6	
E.20.7	International organisations (e.g. International Monetary Fund)	1 2 3 4 5						منظمات دولية (مثل صندوق النقد الدولي)			E.20.7	
E.20.8	Business magazines	1 2 3 4 5						المجلات التجارية			E.20.8	
E.20.9	Academics	1 2 3 4 5						الأكاديميون			E.20.9	
E.20.10	Libyan embassies abroad	1 2 3 4 5						السفارات الليبية في الخارج			E.20.10	
E.20.11	Governmental domestic agencies (e.g. Libyan Investment Board)	1 2 3 4 5						الوكالات الحكومية المحلية (مثل مجلس الاستثمار الليبي			E.20.11	
E.20.12	Other (Please specify)						أخرى، يرجى التحديد					E.20.12
E.21	In your opinion, which of the following factor/s may negatively affect the stock market?										E.21	
في رأيك، إلى أي درجة أنت مهتم بالأحداث أدناه والتي قد تؤثر سلبا على سوق الأسهم؟												
Please tick the box that best reflects your answer where:												
<div> <div>1 = Not concerned غير مهتم</div> <div>2 = Slightly concerned مهتم قليلا</div> <div>3 = Moderately concerned مهتم</div> <div>4 = Very concerned مهتم جدا</div> <div>5 = Extremely concerned مهتم على الإطلاق</div> </div>												
Code	Statements	Score	النتيجة					البيانات			رت	
E.21.1	Political events (e.g. revolutions, political instability, riots, corruption, expropriation, and terrorism).	1 2 3 4 5						أحداث سياسية (مثل الثورات، عدم الاستقرار السياسي، أعمال الشغب، الفساد، نزع الملكية والإرهاب).			E.21.1	
E.21.2	Financial events (e.g. foreign exchange rates, interest rates or commodity prices currency inconvertibility, economic sanctions, restrictions on ownership, and taxation).	1 2 3 4 5						الأحداث المالية (مثل سعر صرف العملات الأجنبية، أسعار الفائدة أو أسعار السلع، العقوبات الاقتصادية، فرض قيود على الملكية والضرائب).			E.21.2	
E.21.3	Cultural events (e.g. language, education, religion).	1 2 3 4 5						الأحداث الثقافية (مثل اللغة، التعليم والدين).			E.21.3	
E.21.4	Other (Please specify)						أخرى، يرجى التحديد					E.21.4

# APPENDICES

E.22	In the process of gathering information about the stock market in which corporation floated. When undertaking any form of business activity, how concerned are you about each of the following financial crises in terms of their potential adverse impact upon your business?	اثناء عملية جمع المعلومات حول الشركة التي تتبع سوق الأسهم المالية إلى أي درجة أنت قلق حول كل من اللزمات الاقتصادية والسياسية والمالية أدناه من حيث عواقبها السلبية؟										E.22
Please tick the box that best reflects your answer where:												
<div> <div>1 = Not concerned غير مهتم</div> <div>2 = Slightly concerned مهتم قليلا</div> <div>3 = Moderately concerned مهتم</div> <div>4 = Very concerned مهتم جدا</div> <div>5 = Extremely concerned مهتم على الإطلاق</div> </div>												
E.22.1	Political instability						عدم الاستقرار السياسي					E.22.1
E.22.2	Economic sanctions	1 2 3 4 5					العقوبات الاقتصادية					E.22.2
E.22.3	Currency inconvertibility	1 2 3 4 5					عدم قابلية تحويل العملة المحلية إلى عملة صعبة					E.22.3
E.22.4	Import and/or export restrictions	1 2 3 4 5					القيود على الاستيراد والتصدير					E.22.4
E.22.5	Ownership and/or personnel restrictions	1 2 3 4 5					القيود على الملكية أو تعيين الموظفين					E.22.5
E.22.6	Investment climate	1 2 3 4 5					مناخ الاستثمار					E.22.6
E.22.7	Terrorism	1 2 3 4 5					الإرهاب					E.22.7
E.22.8	Demonstrations, riots and insurrection	1 2 3 4 5					تظاهرات وأعمال الشغب والتمرد					E.22.8
E.22.9	Corruption	1 2 3 4 5					الفساد					E.22.9
E.22.10	Wars	1 2 3 4 5					الحروب					E.22.10
E.22.11	Taxation restrictions	1 2 3 4 5					القيود الضريبية					E.22.11
E.22.12	Other (Please specify)						أخرى، يرجى التحديد					E.22.12
E.23	In the following table there are several problematic factors which might influence the success of stock market performance. Please answer these questions by selecting the option that you think best reflects your opinion.	في الجدول التالي هناك عدة عوامل قد تعيق أو تؤثر على نجاح أداء سوق الأوراق المالية. الرجاء الإجابة عن هذه الأسئلة عن طريق اختيار أفضل الإجابة والتي تعتقد إنها تعكس رأيك.										E.23
Please tick the box that best reflects your answer where:												
<div> <div>1 = No obstacle لا توجد عقبة</div> <div>2 = Minor obstacle عقبة بسيطة</div> <div>3 = Moderate obstacle عقبة معتدلة</div> <div>4 = Obstacle عقبة</div> <div>5 = Major obstacle عقبة كبيرة</div> </div>												
Code	Statements	Score					البيانات					رت
E.23.1	There are no clear monetary policies in relation to the exchange rate	1 2 3 4 5					لا توجد سياسات نقدية واضحة بالنسبة لسعر الصرف					E.23.1
E.23.2	There are high rates of taxes and tariffs	1 2 3 4 5					هناك ارتفاع معدل الضرائب والتعريفات الجمركية					E.23.2
E.23.3	Disorganisation and corruption exists in financial institutions	1 2 3 4 5					عدم التنظيم وظهور الفساد في المؤسسات المالية					E.23.3
E.23.4	There is excessive regulation and bureaucracy	1 2 3 4 5					هناك الإفراط في التشريعات والبيروقراطية					E.23.4
E.23.5	There is a lack of data and information	1 2 3 4 5					نقص في البيانات والمعلومات					E.23.5
E.23.6	There is a lack of discussion on stock market performance	1 2 3 4 5					نقص في إبداء الرأي والحوار حول أداء سوق الأوراق المالية					E.23.6
E.23.7	There are weaknesses in skills within the workforce	1 2 3 4 5					هناك نقاط ضعف في المهارات داخل القوى العاملة					E.23.7
E.23.8	There are political/business risks	1 2 3 4 5					هناك مخاطر سياسية وتجارية					E.23.8
E.23.9	Oil prices shocks	1 2 3 4 5					المضاربة في أسعار النفط					E.23.9
E.23.10	Other (Please specify)						أخرى، يرجى التحديد					E.23.10
E.24	Which of the following do you consider to be the best practise model experiments for the Libyan stock market?	من خلال البيانات التالية هناك، العديد من التجارب النموذجية لعدة دول، في رأيك ما هو النموذج الأفضل الذي ينطبق على حالة سوق الأوراق المالية الليبي؟										E.24
Please tick the box that best reflects your answer where:												
<div> <div>1 = Strongly disagree لا أوافق بشدة</div> <div>2 = Disagree لا أوافق</div> <div>3 = Neither agree nor disagree محايد</div> <div>4 = Agree أوافق</div> <div>5 = Strongly agree أوافق بشدة</div> </div>												
Code	Statements	Score					البيانات					رت
E.24.1	Middle Eastern and North African Countries	1 2 3 4 5					بلدان الشرق الأوسط وشمال أفريقيا					E.24.1
E.24.2	Far Eastern Countries	1 2 3 4 5					بلد الصين					E.24.2
E.24.3	Indian Subcontinent Countries	1 2 3 4 5					بلد الهند					E.24.3
E.24.4	Central and Eastern European Countries	1 2 3 4 5					بلدان أوروبا الوسطى والشرقية					E.24.4
E.24.5	Latin American Countries	1 2 3 4 5					بلدان أمريكا اللاتينية					E.24.5
E.24.6	Other (Please specify)						أخرى، يرجى التحديد					E.24.6

# APPENDICES

E.25	To whom are the results of the stock market assessment reported? (Please state the title only)		E.25
Code	Statements	إلى من ترسل تقييم نتائج سوق الأوراق المالية؟ (يرجى ذكر عنوان فقط)	رت
E.25.A		البيانات	E.25.A
E.25.B			E.25.B
E.25.C			E.25.C
E.25.D			E.25.D
E.25.E			E.25.E
E.25.F			E.25.F
E.25.G			E.25.G

Please write any comments which you feel would be helpful to this research.

الرجاء تدوين أية ملاحظات ترى إنها مفيدة لهذه الدراسة.

If you are interested in obtaining a free copy of the result of this study, please complete your details here and attach this order form with the completed questionnaire.

إذا كنت ترغب في الحصول على نسخة مجانية من نتيجة هذه الدراسة، يرجى استكمال التفاصيل الخاصة بك أدناه مرفقة مع استمارة الاستبيان.

Name:..... الاسم

E-mail:..... البريد الإلكتروني:

Address:..... العنوان:

Thank you for your time and co-operation in completing this questionnaire

شكرا جزيلاً على وقتك والتعاون معنا في إنجاز هذا الاستبيان

**Appendix H: Covering Letter from the University of Huddersfield with Regard to  
Conducting the Semi-structured Interviews**



20/09/2007

Dear Participant

Thank you very much for your participation in the previous survey designed as a methods of collecting data. Initial analysis of the survey has revealed interesting findings. As one of the successful players in the economic reform and the financial market, these findings now need to be discussed with you. I should therefore be most grateful if you would agree to be interviewed within the next two weeks. The location, date and time are to be arranged at your convenience.

The general theme of the interview will center upon two main issues.

- The economic reform programme, which should represent one of the successful factors of Libyan stock market performance in the future.
- The practices of an economic reform programme upon the Libyan economy and financial institutions.

We guarantee that all information provided and data collected will be regarded as strictly confidential and will be used solely for academic research in which no individual economic or financial system will be identified. If you have any queries about this interview, please contact researcher or Dr. John Cook on the numbers or e-mails provided below.

Your participation is very much appreciated.

Sincerely yours,

Najeb Masoud

Business School  
University of Huddersfield  
HD1 3DH  
Telephone: 07757261306  
E-mail: [najeb2000@hotmail.com](mailto:najeb2000@hotmail.com)

Dr. John Cook

Director of Studies  
Business School  
Huddersfield University  
HD1 3DH  
Tel: +44 (0) 1484 472086  
E-mail: [j.a.cook@hud.ac.uk](mailto:j.a.cook@hud.ac.uk)

## Appendix I: Interview Questions



*University of*  
**HUDDERSFIELD**

**LIBYA'S ECONOMIC REFORM PROGRAMME AND THE CASE FOR A STOCK MARKET**

Semi-structured Interview

Question One: Do you think a stock market is needed in Libya? And why?

Question Two: The majority of Libyans state “*The Libyan Central Bank control the Libyan stock market*” Do you agree with that? Why? If you disagree, do you think the stock market should be independent or controlled by others (the Economic Fund and Social Development or Ministry of Financial Control)?

Question Three: What are the main prerequisites for a successful stock market performance in Libya?

Question Four: What is the relationship between the Libyan economic reform programme and stock market performance and could you please indicate the benefits of that relationship. How significant is the impact of the stock market in relation to the following areas:

1=High impact	2= Low Impact	3= Do not know	4= No impact
---------------	---------------	----------------	--------------

Financial turnover of the organisation

Reputation of the organisation

Quality of goods and products

Profitability

Productivity

Market share

Employee satisfaction

Cost reduction

Question Five: How effective are the post-sanction economic reforms in transforming the Libyan economy from bank-based to one that is market-based? Could you explain how and why?

Question Six: Does financial maturity alter as the Libyan economy changes? Does it differ from other countries and how?

Question Seven: What kind of techniques do you use in your company's activities in the financial market? Does the decision-making process of the financial market cope with the firms in the market?

Question Eight: In your view, what are the strengths and weaknesses in the structure of the Libyan economy, and what efforts are needed in your organisation to improve financial market activities?

**Thank you very kindly for your time and co-operation in completing this interview**

## Appendix J: Respondent Interviews

Approach methods of qualitative data collection in the form of *in-depth interviews* were used in this research. 14 respondents were selected as the target for *interviews* from those not targeted in the questionnaire. This approach is based on:

**Respondent A:** General Manager of Central Bank. Despite the respondent being “very” enthusiastic about the banking system in terms of economic reform programme, there is no formal responsibility assigned for an individual (s) to conduct the banking reform process, nor is any effort made by any individual in the banking system to do so. This bank, therefore, was classified as one of the most important among financial institutions.

**Respondent B:** General Manager of the Stock Market. This individual is “extremely” concerned about economic reform programmes in terms of financial institutions. He is formally responsible for conducting the programme of economic reform. The macro-economic reform and financial maturity are utilised as a valuable source of information. Even though a questionnaire suggests the use of qualitative techniques in an economic reform programme, the interview does not.

**Respondent C:** Executive Manager/ Investment Department of Business. The business has never assigned formal responsibility for an individual (s) to conduct the economic reform programme even though its executive manager is “very” concerned about the financial market. The main sources of information for this manager are personnel at headquarters, colleagues overseas and other institutions. This manager is satisfied with his approach to their economic reform and business environment.

**Respondent D:** Senior General Manager Marketing. This respondent is formally responsible for conducting an economic reform programme. The manager is “very” concerned about economic reform in terms of any unfavourable consequences upon the financial market. The programme is, therefore, conducted occasionally and is motivated by proposing investment and/or re-investment in a certain country. This manager is “very” satisfied with his approach to the process of stock market.

**Respondent E:** General Manager of Banking Sector. Despite being “very” concerned about the economic reform programme and financial maturity, formal responsibility for an individual (s) to conduct the economic reform programme has never been assigned. In conducting the programme, the manager relies on various sources of information, including other banks and financial institutions thought to be knowledgeable in specific areas. This manager, however, is satisfied with his approach to an economic reform programme.

**Respondent F:** Marketing Manager/Corporate Marketing Manager of Finance Marketing Strategy and Plans. The manager is “very” concerned about developing existing business strategy and agreeing the budget and the creation of new job opportunities. He relies on his support for business development activities including events’ organisation, collateral development, and website and database management. Finally, he is “very” satisfied with his experience of operating within a professional service environment.

**Respondent G:** Manager of Public Sector. The latter is italicise concerned about the private sector but “very” concerned about the public sector. In conducting the process, the manager can realise diverse sources of

information including public sector competition. This manager, though, is satisfied with his approach to professional service experience in terms of an economic reform programme.

**Respondent H:** General Manager of Private Sector. The general manager is “moderately” concerned about ownership in terms of any unfavourable consequences concerning companies. There is no formal responsibility for an individual (s) to perform the ownership process but the related activities are conducted by the general management of companies. The manager relies on banks and other companies, usually similar in nature, to obtain required data. He is dissatisfied with current arrangements regarding ownership of companies.

**Respondent I:** Manufacturing Improvement Manager. The manufacturing manager is “very” concerned about economic reform programme relating any unfavourable consequences upon manufacturing efficiencies. He is, though, “very” satisfied with his approach and in delivering successful investment projects.

**Respondent J:** Financial Manager of Planning. The manager is “very” concerned about the economic reform programme, direct, organisation control and implementing the financial policies and systems of establishment. He obtains information and prepares various financial reports for senior management. He is satisfied with his approach to the companies via the private sector and government.

**Respondent K:** Accounting Disclosure Manager. Despite the manager being “very” concerned about economic reform, formal responsibility for an individual(s) to conduct the economic reform programme has never been assigned. In conducting the programme, the manager relies on different sources of information, including formal accounting authorities such as company regulations, securities, commission and stock market disclosure requirements. Nonetheless, this manager is satisfied with his approach to an economic reform programme.

**Respondent L:** Managers of Financial Regulations of Financial Institutions. The financial manager of regulation is “very” concerned about the economic reform programme in terms of the financial market to certain requirements by a government or non-governmental organisation. This manager is formally responsible for supervision, restriction and guidelines. Even though, a questionnaire suggests the use of qualitative and quantitative techniques in the Libyan financial arena and economy.

**Respondent M:** Director of the Economic Research Centre. The respondent is “very” enthusiastic about the multi-disciplinary research centre that brings together undergraduates, graduates, post-doctoral fellows and academics from a wide range of academic disciplines to research and study the Libyan economy related issues and topics. The manager provides a wider societal role and serves as a key element in the Libyan economic reform programme.

**Respondent N:** Director of the Tax Department, Finance Ministry. The Taxes manager is “extremely” concerned to provide the most important revenue source for the government about the economic reform programme in terms of financial institutions. This manager is formally responsible for conducting the source of fiscal revenue; tax is a key economic player of macro-economic reform and fiscal policy requirements and greatly affects the Libyan economy and social development.



## Appendix K: Chapter Seven: Presentation of the Findings

### K.1 Analysis of the Results Related to Participants and Organisations Characteristics

#### K.1.1 Sample Description Characteristics

**Table K 1.1 Distribution of Responses by Demographics of Gender and Age (PERSONAL) Sample Groups <sup>a</sup>**

Statements	Group 1 CLM		Group 2 CYM		Group 3 PVS		Group 4 PCS		Group 5 FLI	
Sample Size	49		43		41		38		32	
Gender										
Male (Per cent)	71.4		67.4		75.6		57.9		62.5	
Female (Per cent)	28.6		32.6		24.4		42.1		37.5	
Age	Freq.	Per.	Freq.	Per.	Freq.	Per.	Freq.	Per.	Freq.	Per.
Under 30	3	6.1	5	11.6	3	7.3	6	15.8	3	9.4
30-40	15	30.6	16	37.2	14	34.1	13	34.2	12	37.5
41-50	19	38.8	17	39.5	16	39.0	14	36.8	13	40.6
51-65	12	24.5	5	11.6	8	19.5	5	13.2	4	12.5
Total	49	100.0	43	100.0	41	100.0	38	100.0	32	100.0

Notice a: Number of total valid responses =203.

Source: Analysis of questionnaire survey data.

**Table K 1.2 Distribution of Responses by Education Levels (EDUCATION) of Participants <sup>a</sup>**

Qualifications	Group 1 CLM		Group 2 CYM		Group 3 PVS		Group 4 PCS		Group 5 FLI	
	Freq.	Per.	Freq.	Per.	Freq.	Per.	Freq.	Per.	Freq.	Per.
High School	N/A	N/A	N/A	N/A	N/A	N/A	1	2.6	N/A	N/A
College Degree	6	12.2	9	20.9	12	29.3	8	21.1	9	28.1
Bachelor's Degree	26	53.1	18	41.9	21	51.2	24	63.2	16	50.0
Master's Degree	8	16.3	13	30.2	6	14.6	4	10.5	5	15.6
Doctorate	9	18.4	3	7.0	2	4.9	1	2.6	2	6.3
<b>Total</b>	<b>49</b>	<b>100.0</b>	<b>43</b>	<b>100.0</b>	<b>41</b>	<b>100.0</b>	<b>38</b>	<b>100.0</b>	<b>32</b>	<b>100.0</b>

Notice a: Number of total valid responses =203.

Source: Analysis of questionnaire survey data.

**Table K 1.3 Distribution of Responses by Academic Background (SUBJECT) of Participants <sup>a</sup>**

Academic Background	Group 1 CLM		Group 2 CYM		Group 3 PVS		Group 4 PCS		Group 5 FLI	
	Freq.	Per.	Freq.	Per.	Freq.	Per.	Freq.	Per.	Freq.	Per.
Accounting and Finance	19	38.8	12	27.9	10	24.4	8	21.1	11	34.4
Economics	9	18.4	10	23.3	8	19.5	6	15.8	9	28.1
Business Studies	4	8.2	4	9.3	5	12.2	3	7.9	4	12.5
Money and Banking	6	12.2	9	20.9	5	12.2	7	18.4	5	15.6
Management and Marketing	11	22.4	8	18.6	13	31.7	14	36.8	3	9.4
<b>Total</b>	<b>49</b>	<b>100.0</b>	<b>43</b>	<b>100.0</b>	<b>41</b>	<b>100.0</b>	<b>38</b>	<b>100.0</b>	<b>32</b>	<b>100.0</b>

Notice a: Number of total valid responses =203.

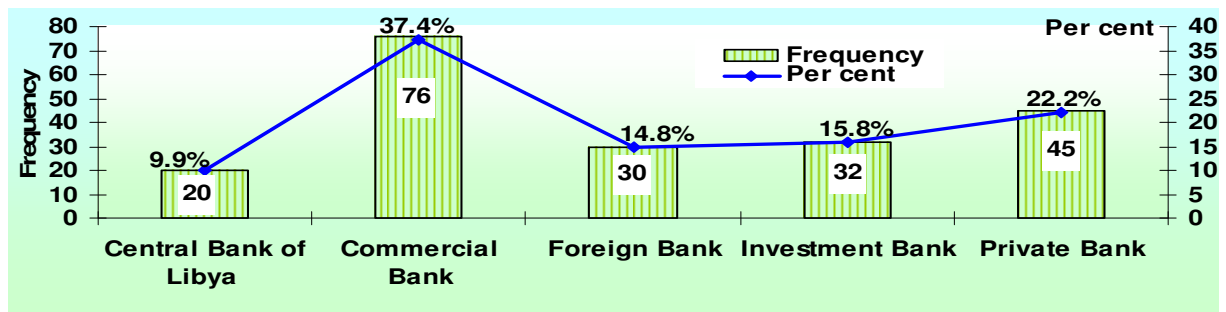
Source: Analysis of questionnaire survey data.

**Table K 1.4 Distribution of Responses by Current Position (POSITION) of Participants <sup>a</sup>**

Current Position	Group 1 CLM		Group 2 CYM		Group 3 PVS		Group 4 PCS		Group 5 FLI	
	Freq.	Per.	Freq.	Per.	Freq.	Per.	Freq.	Per.	Freq.	Per.
General Manager	2	4.1	6	14.0	7	17.1	5	13.2	7	21.9
Senior Manager	6	12.2	7	16.3	5	12.2	8	21.1	7	21.9
Administrative Manager	19	38.8	13	30.2	12	29.3	10	26.3	9	28.1
Employment Manager	17	34.7	10	23.3	11	26.8	6	15.8	4	12.5
Public Relationship Manager	5	10.2	7	16.3	6	14.6	9	23.7	5	15.6
<b>Total</b>	<b>49</b>	<b>100.0</b>	<b>43</b>	<b>100.0</b>	<b>41</b>	<b>100.0</b>	<b>38</b>	<b>100.0</b>	<b>32</b>	<b>100.0</b>

Notice a: Number of total valid responses =203.

Source: Analysis of questionnaire survey data.

Figure K 1.1 Distribution of Responses by Type of Bank Category (LOCATION) <sup>a</sup>

Notice a: Number of total valid responses =203.

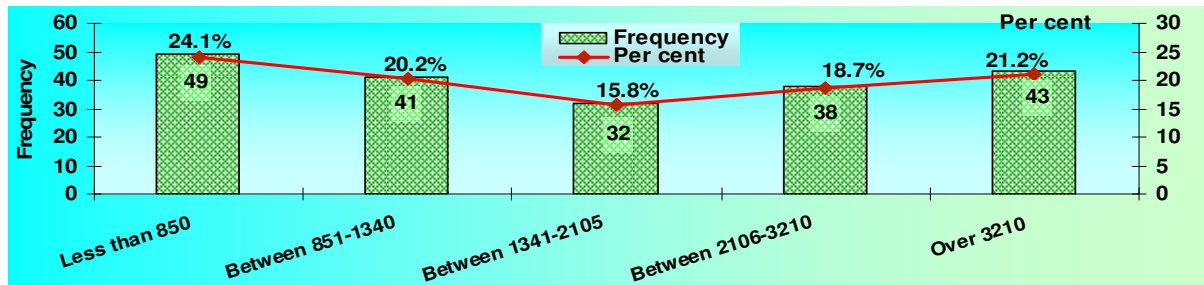
Source: Analysis of questionnaire survey data.

Table K 1.5 Distribution of Responses by Work Experience (EXPERIENCE) of Participants <sup>a</sup>

Academic Background	Group 1 CLM		Group 2 CYM		Group 3 PVS		Group 4 PCS		Group 5 FLI	
	Freq.	Per.	Freq.	Per.	Freq.	Per.	Freq.	Per.	Freq.	Per.
Less than 3 years	2	4.1	3	7.0	6	14.6	5	13.2	4	12.5
3-6 years	8	16.3	7	16.3	8	19.5	7	18.4	9	28.1
7 to 10 years	21	42.9	13	30.2	14	34.1	11	28.9	8	25.0
More than 10 years	18	36.7	20	46.5	13	31.7	15	39.5	11	34.4
<b>Total</b>	<b>49</b>	<b>100.0</b>	<b>43</b>	<b>100.0</b>	<b>41</b>	<b>100.0</b>	<b>38</b>	<b>100.0</b>	<b>32</b>	<b>100.0</b>
Chi-Square	19.000		15.326		4.366		6.211		3.250	
Asymp. Sig.	0.000		0.002		0.225		0.102		0.355	

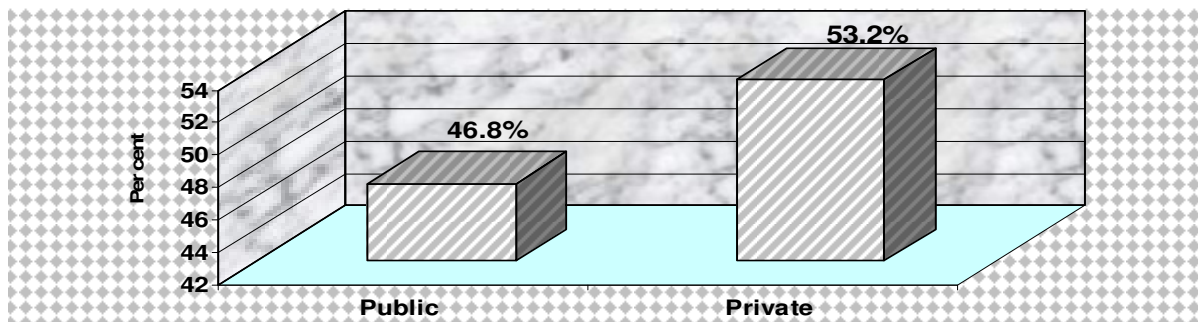
Notice a: Number of total valid responses =203.

Source: Analysis of questionnaire survey data.

Figure K 1.2 Distribution of Responses by Number of Employees (EMPLOY) <sup>a</sup>

Notice a: Number of total valid responses =203.

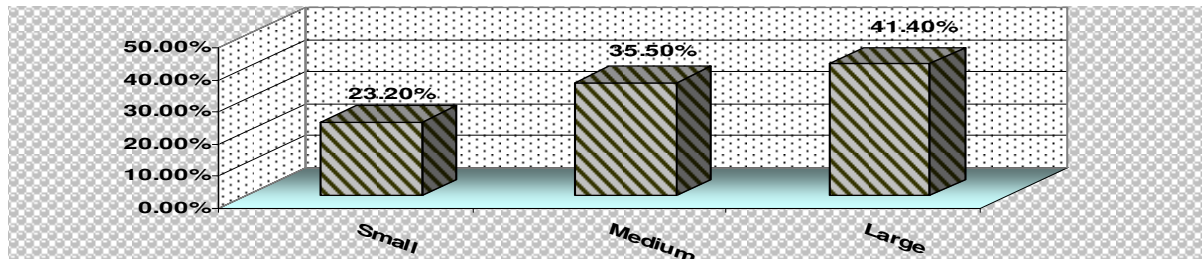
Source: Analysis of questionnaire survey data.

Figure K 1.3 Distribution of Responses Companies by Shares' Ownership (OWNERSHIP) <sup>a</sup>

Notice a: Number of total valid responses =203.

Source: Developed from questionnaire survey data analysis from Subsection 6.3.1.8: Ownership.

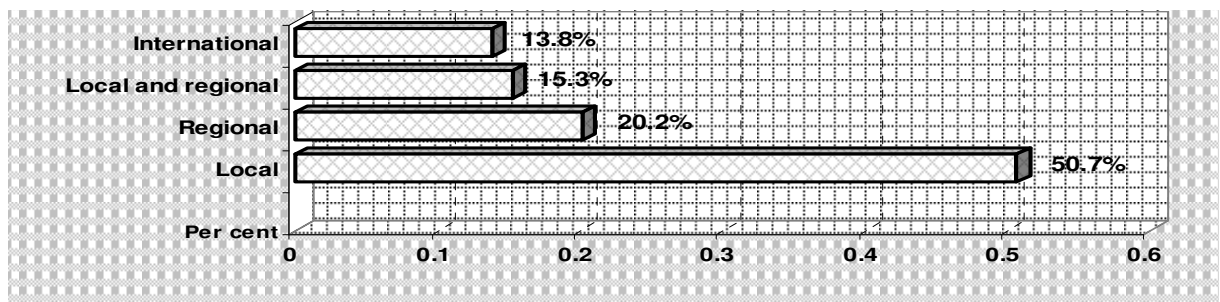
**Figure K 1.4 Distribution of Responses Companies by Total Assets (SIZE) in LD Million <sup>a</sup>**



Notice a: Number of total valid responses =203.

Source: Developed from questionnaire survey data analysis from Subsection 6.3.1.9: Size.

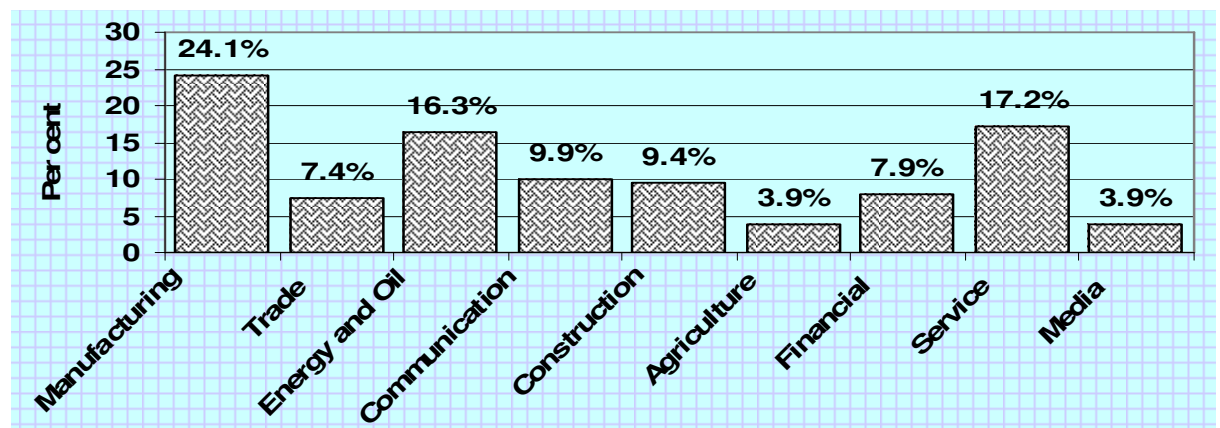
**Figure K 1.5 Distribution of Responses Companies by Number of Operating Markets (MARKET) <sup>a</sup>**



Notice a: Number of total valid responses =203.

Source: Developed from questionnaire survey data analysis from Subsection 6.3.1.10: Current Market Region.

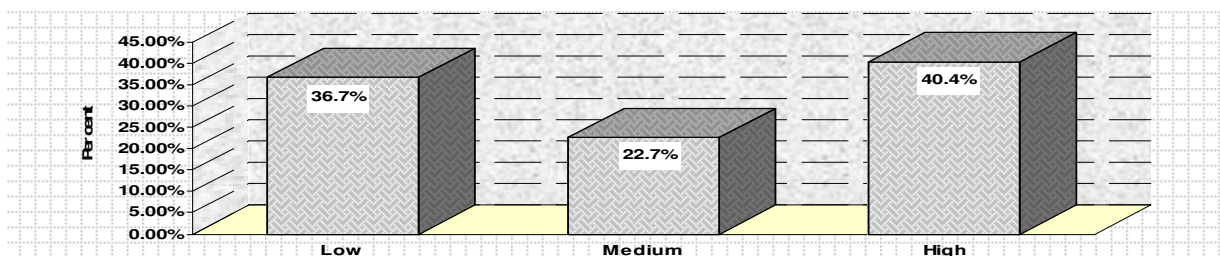
**Figure K 1.6 Distribution of Responses Companies by Type of Industry (INDUSTRY) <sup>a</sup>**



Notice a: Number of total valid responses =203.

Source: Developed from questionnaire survey data analysis from Subsection 6.3.1.11: Industry.

**Figure K 1.7 Distribution of Responses Companies by Revenue (REVENUE) <sup>a</sup>**



Notice a: Number of total valid responses =203.

Source: Developed from questionnaire survey data analysis from Subsection 6.3.1.12: Revenue.

## K.2 Correlations of Coefficient among Characteristics

This part provides a contribution by describing the correlation analysis using *SPSS (2003)* packages used to measure the basic statistical relationship between characteristics (i.e. personnel, education, subject, position and location) that are common to both sample and population. Other variables of characteristics correlated of the size of financial institutions. They are classified into three categories representing small, medium and large-sized. Large-sized companies possess more assets, larger numbers of employees, industry and ownership companies, which operate in more current markets than do medium or small-sized entities. However, the higher the number of operating markets, the higher the number of industries.

The output of Spearman's Rho test<sup>66</sup>, as depicted in Table K 2.1, is to test whether there is a significant correlation between the five characteristic variable ratings. Findings illustrate that there is no linear relationship between correlation coefficient among the variables of characteristics. Spearman's Rho test detected insignificant correlation between personal characteristics of age of employee and other characteristics which have facilities: SUBJECT (Spearman's Rho = 0.062,  $P > 0.05$ , 2-tailed) and LOCATION (Spearman's Rho = 0.026,  $P > 0.05$ , 2-tailed). These results indicate that, as one variable (personal) increases, the other variables increase too. The output of Spearman's Rho test further reveals that there is no linear relationship significant correlation between education and current POSITION of employee (Spearman's Rho = 0.076,  $P > 0.05$ , 2-tailed) and bank category LOCATION (Spearman's Rho = 0.096,  $P > 0.05$ , 2-tailed). The first correlation means that, the higher the level of education, the higher the position of job responsibility which may be achieved. The second correlation means that, the higher the level of education, the higher the location of bank category.

**Table K 2.1 Correlation of Coefficients among the Variables of Characteristics**

Characteristics	Spearman's Rho (2-tailed) (Valid N=203)				
	PERSONAL	EDUCATION	SUBJECT	POSITION	LOCATION
Personal	-	$r^a = -0.051$ $p^b = 0.471$	$r = 0.062$ $p = 0.383$	$r = -0.061$ $p = 0.378$	$r = 0.026$ $p = 0.709$
Education		-	$r = -0.035$ $p = 0.623$	$r = 0.076$ $p = 0.279$	$r = 0.052$ $p = 0.465$
Subject			-	$r = -0.086$ $p = 0.225$	$r = -0.052$ $p = 0.462$
Position				-	$r = -0.029$ $p = 0.681$
Location					-

Notice a: Spearman's Rho correlation coefficient test ( $r$ ).

Notice b: Probability ( $p$ ) of correlation coefficient value is Sig. (2-tailed) relationship between two variables.

Source: Analysis of questionnaire survey data.

Further analysis of response characteristics were negative linear relationship between personal variable and the qualification of EDUCATION degree (Spearman's Rho = -0.025,  $p > 0.05$ , 2-tailed) and POSITION (Spearman's Rho = -0.061,  $p > 0.05$ , 2-tailed). This result indicates that, as personal ratings increase, the level of education ratings decrease. Therefore, as each personal perception of age of employee varies, these ratings may not represent reliable indicators of the actual performance of qualification of education level degree and current position of job responsibility. Nevertheless, there were significant negative correlations between level of education and SUBJECT (Spearman's Rho = -0.035,  $p > 0.05$ , 2-tailed) academic background SUBJECT with ratings of POSITION (Spearman's Rho = -0.086,  $p > 0.05$ , 2-tailed) and subject and LOCATION (Spearman's Rho = -0.063,  $p > 0.05$ , 2-tailed). The output of Spearman's Rho test, as depicted in Table K 2.2, reveals that there is a significant positive correlation coefficient between size of total assets in million LD and the number of company employees EMPLOY (Spearman's Rho = 0.188\*,  $p < 0.01$ , 2-tailed). This result of correlation suggests that the greater the company's total assets, the higher the company's number of employees, and vice versa. Similar significant positive correlations are found between the variable of size and the variables of EXPERIENCE, market and OWNERSHIP. The output of Spearman's Rho test further reveals that there is insignificant

<sup>66</sup> The requirements and interpretation of Spearman's Rho are discussed in Chapter Six: Subsection 6.10.1.2.1.2.

correlation between size and income of REVENUE (Spearman's Rho = -0.173\*,  $p < 0.05$ , 2-tailed) and the number of INDUSTRY of which companies have facilities (Spearman's Rho = -0.046,  $p > 0.05$ , 2-tailed).

**Table K 2.2 Correlation of Coefficients among the Variables of Characteristics**

Characteristics	Spearman's Rho (2-tailed) (N=203)						
	SIZE	EMPLOYEES	EXPERIENCE	REVENUE	MARKET	INDUSTRY	OWNERSHIP
Size <sup>a</sup>	-	$r = 0.188^{**}$ $p = 0.007$	$r = 0.025$ $p = 0.722$	$r = -0.173^{*}$ $p = 0.013$	$r = 0.074$ $p = 0.294$	$r = -0.046$ $p = 0.516$	$r = 0.056$ $p = 0.428$
Employees		-	$r = -0.012$ $p = 0.868$	$r = -0.002$ $p = 0.976$	$r = -0.069$ $p = 0.329$	$r = 0.002$ $p = 0.974$	$r = 0.080$ $p = 0.258$
Experience			-	$r = 0.082$ $p = 0.246$	$r = 0.050$ $p = 0.481$	$r = 0.077$ $p = 0.274$	$r = -0.018$ $p = 0.801$
Revenue				-	$r = -0.052$ $p = 0.464$	$r = -0.010$ $p = 0.884$	$r = -0.059$ $p = 0.402$
Market					-	$r = 0.096$ $p = 0.175$	$r = -0.082$ $p = 0.244$
Industry						-	$r = -0.117$ $p = 0.096$
Ownership							-

Notice a: Size measured by total assets in LD million.

Notice b: \* Correlation is significant at the 0.05 level (2-tailed).\*\* Correlation is significant at the 0.01 level (2-tailed).

Source: Analysis of questionnaire survey data.

The second correlation means that, the higher the number of employees in companies, the higher the number of industry and ownership which have no linear relationship correlation between a company's number of employees and INDUSTRY (Spearman's Rho = 0.002,  $p > 0.05$ , 2-tailed) and OWNERSHIP companies (Spearman's Rho = 0.080,  $p > 0.05$ , 2-tailed), while there is negative relationship between the number of employees and EXPERIENCE (Spearman's Rho = -0.012,  $p > 0.05$ , 2-tailed). Income of REVENUE (Spearman's Rho = -0.002,  $p > 0.05$ , 2-tailed) and the operative current MARKET (Spearman's Rho = -0.069,  $p > 0.05$ , 2-tailed) as correlation suggests the higher the company's number of employees, the less experience, lower rate of revenue. The third correlation means there is no linear relationship between experience and REVENUE (Spearman's Rho = 0.082,  $p > 0.05$ , 2-tailed), market (Spearman's Rho = 0.050,  $p > 0.05$ , 2-tailed) and number of INDUSTRY (Spearman's Rho = 0.077,  $p > 0.05$ , 2-tailed). There was no significant correlation between the amount of experience and number of OWNERSHIP companies (Spearman's Rho = -0.018,  $p > 0.05$ , 2-tailed). The fourth correlation suggests there is insignificant negative correlation between a company's revenue and the degree of MARKET (Spearman's Rho = -0.052,  $p > 0.05$ , 2-tailed), INDUSTRY (Spearman's Rho = -0.010,  $p > 0.05$ , 2-tailed) and OWNERSHIP companies (Spearman's Rho = -0.059,  $p > 0.05$ , 2-tailed). The fifth correlation means that the higher the number of operating markets, the higher the number of industries of which there is no linear correlation between current market and the number of INDUSTRY companies (Spearman's Rho = 0.096,  $p > 0.05$ , 2-tailed). There was insignificant correlation between market and number of OWNERSHIP companies (Spearman's Rho = -0.082,  $p > 0.05$ , 2-tailed). The final correlation means that there is negative correlation between the number of industry and the OWNERSHIP companies (Spearman's Rho = -0.117,  $p > 0.05$ , 2-tailed).

**Table K 2.3 Company Ownership and Other Company-specific Characteristics**

Characteristics	Ownership Categories (Median), (Valid N=203) Companies					
	Public (N = 95)	Private (N = 108)				
SIZE	29.04	32.06				
EMPLOYEES	1104	746				
EXPERIENCE	7	9				
REVENUE ( <i>per cent</i> )	14.6	21.0				
MARKET	9	11				
<i>Cross-tabulation (Industry/Ownership)</i>						
INDUSTRY	Number of Companies					
	Frequency	<i>Per cent</i>	Frequency	<i>Per cent</i>	Total	<i>Per cent</i>
Manufacturing	39	45.3	47	54.7	86	100
Non-manufacturing	56	47.9	61	52.1	117	100

Source: Analysis of questionnaire survey data.

For further analysis of the characteristics of the responding companies, in order to gain a rich description of capital market practices, responses were analysed based on sector (SIZE, EMPLOYEES, EXPERIENCE, REVENUE, MARKET), OWNERSHIP (public and private companies) and INDUSTRY (manufacturing and non-manufacturing). In doing so, the *median*, as displayed in Table K 2.3, is an analysis of private companies owning more total assets (*median* 32.06 Million LD), have more years in experience (*median* 9), greater revenue from total productivity (*median* 21.0) and operate in more markets (*median* 11) than is the case for public companies. These companies, however, have more employees (*median* 1104) than their private contemporaries (*median* 746). There are a few differences between private and public companies in terms of employment, goals and receipt of government subsidies. Sun et al. (2002) argued that public companies differ in terms of choice of social and political goals, while private companies are more concerned about the ability to perform in terms of employment of staff than public companies. Studies by Dewenter and Malalatesta (2001) and Sun et al. (2002), among others, conducted empirical support for the proposal that public ownership is less efficient than private.

Furthermore, development of the public manufacturing sector in Libya featured rapid decisions incorporating most industrial and trade activities with the reverse decision to privatise. This decision started simply, featuring Act no.9 of 1992 in relation to engagement in economic activities, leading to the more comprehensive GPC resolution (no.30) of 2003 issuing regulations to organise ownership of companies and other public economic units. Table K 2.3 illustrates cross-tabulating company's industry categories with ownership and that there are forty-seven (54.7 *per cent*) private manufacturing companies versus thirty-nine (45.3 *per cent*) public, while the vast majority of responding private companies sixty-one (52.1 *per cent*) are non-manufacturing, versus fifty-six (47.9 *per cent*) public companies of disparate sizes.

### K.3 Practices of the Libyan Economic Characteristics

#### K.3.1 Other Recommended Economic Reforms

##### K.3.1.1 Financing Policy

#### *Questionnaire Findings*

Respondents to the questionnaires were presented with six questions-derived potential reasons likely to cause Libyan companies to issue shares. The respondents were asked to rate degrees of concern relating to these reasons on a 5-point rating scale. Based on the means of concern indicated towards share issuing policies, presented in Table K 3.1, the highest ranked statement was, 'Fulfilling legal requirements regarding capital is ranked as the most important factor' (mean 4.01). Analysis reflects that the second most important factor was 'Issuing shares gives investors a better impression of a firm's prospects than using debt' (mean 3.96). These results were crosschecked with interview results which illustrate that there are more supply-side effects influencing financing policy than demand-side effects in the Libyan business environment as respondents place a high value on the factor relating to inability to secure funds via other sources of finance.

**Table K 3.1 Descriptive Statistics for Financing Policy for Issuing Shares**

Code	Rank	Statements	% <sup>a</sup>	Valid N=203	
				Means	SD
B31.1	5	Product environment	67.5	3.7438	1.22005
B31.2	3	Whether recent profits have been sufficient to fund activities	75.9	3.9163	1.12922
B31.3	6	Shares are the cheapest source of funds	64.0	3.6601	1.24985
B31.4	4	Shares are the least risky source of funds	73.4	3.8719	1.15328
B31.5	2	Issuing shares gives investors a better impression of a firm's prospects than using debt	78.3	3.9606	1.13819
B31.6	1	Fulfilling legal requirements regarding capital	79.3	4.0148	1.06927

Notice a: The percentage of respondents who scored 4 "agree" and 5 "strongly agree".

Source: Analysis of questionnaire survey data.

#### *Interview Findings*

Respondents from the companies involved were further asked to indicate techniques relating to the financing policy in which their companies operate. As interviewees were not required to tick or rate a pre-formulated written set of answers, the relevant measure was the number of times any given technique was mentioned. The interview findings, as depicted in Table K 3.2, demonstrate that shares are the right of participating in a company which is the instrument which proves that right negotiable according to the rules of commercial law, and a

contributor right to participate in public associations, the right to vote in the election and the right of priority in subscription when the capital increases, as it affords the right to receive a portion of profits when a company goes into liquidation.

**Table K 3.2 Respondents' Interviews to Financing Policy**

Policy of Finance	Valid N=11 interviews <sup>a</sup>	
	Number of Mentions	Per cent
Any financing policy	11	100.0
Any non-financing policy	3	27.3

Notice a: Details totalled more than N = 11 and 100 *per cent* due to duplicate responses.

Source: Analysis of the data obtained from semi-structured interviews.

Interviewees were further required to explain reasons behind relying on particular techniques. The common justification for relying on financing policy for interviewees was the factors influencing the rise or decline in stock index and, thus, the specific information required (Respondent F). Other significant policies are: the performance of the company and management efficiency (Respondent F); profitability of the company (Respondent H); financial position (Respondent J); the company's growth prospects and the performance of the company to which it belongs in a certain period of time where there is a sector of significant growth or contraction (Respondent I). The country's economy: the country's economic situations always affect share prices causing them to rise when the economy is recovering and to fall when the economy is in recession (Respondent D); impact on stock prices because they affect the country's economy and political events (Respondent B); affect share prices positively or negatively (Respondent E).

### K.3.1.2 Firms' Decisions

#### Questionnaire Findings

Respondents to the questionnaires were presented with six questions-derived potential about firms' decisions concerning issuing shares. The respondents were asked to rate degrees of concern relating to these reasons on a 5-point rating scale. Based on the means and *per cent* of concern indicated towards firms' decisions, presented in Table K 3.3, the highest ranked statement was, 'To maintain increased market share to satisfy the customer perspective' (mean 3.99, *per cent* 79.3). Analysis reflects that the second most important factor was 'To strengthen the relationship between the public and private sector' (mean 3.91, *per cent* 75.3). These results were crosschecked with interview results which illustrate that the most active factors in these decisions are to increase stock market efficiency and reduce wastage. This finding is consistent with the conclusion of Harrison and Paton (2004: 220) who noted that evidence of stock market efficiency is helpful in deciding whether transition economies in Europe are able to satisfy the key criterion of having a functioning market economy as stipulated in the Copenhagen Criteria for European Union membership. Lim et al. (2007) argued that an efficient stock market encourages efficiency in the allocation of resources and would better equip an economy to cope with the competitive pressure within the Union.

**Table K 3.3 Descriptive Statistics for Most Important Factors for Firms' Decisions**

Code	Rank	Statements	% <sup>a</sup>	Valid N=203	
				Means	SD
B32.1	4	To increase stock market efficiency and reduce wastage	69.9	3.8128	1.16654
B32.2	1	To maintain increased market share to satisfy customer perspective	79.3	3.9852	1.14095
B32.3	2	To strengthen the relationship between public and private sector	75.3	3.9064	1.19243
B32.4	6	To add strength to the company reputation	65.5	3.6995	1.17032
B32.5	3	To improve stock market service quality	72.9	3.8571	1.17072
B32.6	5	To encourage quality awareness within stock markets	69.5	3.8128	1.17078

Notice a: The percentage of respondents who scored 4 "important" and 5 "very important".

Source: Analysis of the data obtained from semi-structured interviews.

#### Interview Findings

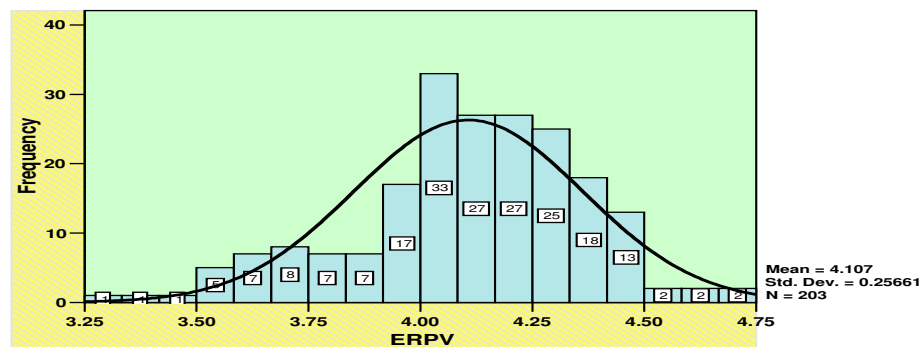
Respondents in the firms interviewed were additionally asked from where they obtained information about decisions which their firms made. Since interviewees were not required to rate or tick a pre-formulated written set of answers, the relevant measure was the number of times any given source was mentioned. Reduction in the nominal value of shares raised will, without doubt, broaden the base of shareholders in the company that could lead to a degree of balance via the distribution of shares in the hands of a large base of contributors (Respondent

F). At the level of primary market, “market version” will, without doubt, reduce the nominal value of shares to one LD, would greatly assist in facilitating the initial proposal and would collect as much as possible from the investments of small investors who would benefit greatly from reducing the nominal value of shares (Respondent C). On the level of market circulation, it is supposed to be a decision by the financial market, based on the new corporate system in their company (Respondent D). “I believe the secondary market will greatly benefit from retail, as it will make it accessible to small investors who were reluctant to engage in some of the shares due to the high values based on previous nominal value” (Respondent B). Interviewees were additionally required to explain their concerns pertaining to decision-making within firms. Retail shares will lead to the entry of new investors to the market assisting reducing the margin of fluctuation that could lead the entire market to a new phase of balanced investment, decrease speculation over shares and reduce the proportion of speculative margin in market. This, in turn, may bring additional benefit to the market through traffic balanced low-risk investors (Respondents C and F).

### K.3.1.3 Histogram of Economic Reform Programme Independent Variables

Figure K 3.1, labelled *Histogram*<sup>67</sup>, displays the *frequency* distribution of the normal distribution curve. SPSS draws a curve on the histogram to show the shape of this distribution. Residuals occurring at 4.107 are beyond the right tail of the curve; furthermore, many of the residuals are fairly close. Some of the columns of residuals are over the curve and others are below it.

**Figure K 3.1 The Histogram of Normal Distribution of ERP Independent Variables**



Source: Developed from questionnaire survey data analysis.

## K.3.2 Macro-economic Reform Condition

### K.3.2.1 Contribution of Output Factors and TFP Growth to Economic Growth

#### *Questionnaire Findings*

Respondents to the questionnaires were presented with five questions-derived potential contribution of factors output and TFP growth to economic growth. The respondents were asked to rate degrees of concern relating to these contributions on a 5-point rating scale. Based on the means of concern indicated towards share issuing policies, presented in Table K 3.4, the highest ranked statement was, ‘Growth of output’ (mean 3.90). Analysis reflects that the second most important factor was ‘Contribution of capital’ (mean 3.85). The statement, ‘Contribution of human capital’ (Mean 3.70) was ranked lowest and therefore these laws were considered the least important source of TFP growth of those listed. According to North (1991), stock market creation can increase the rate of economic growth by reducing the costs of exchanging ownership rights in firms. Another study by Bencivenga and Smith (1991) classified new stock markets as increasing economic growth by lowering the holdings of liquid assets and increasing the growth rate of physical capital. These results were checked with the interview results which demonstrate that the most active factors in these decisions are to improve growth of output and increase capital of accumulation.

<sup>67</sup> The rationale and assumptions of using a *Histogram* were discussed in Chapter Six: Subsection 6.10.1.2.2.



**Table K 3.4 Descriptive Statistics for Contribution of Output and TFP in Economic Growth**

Code	Rank	Statements	% <sup>a</sup>	Valid N=203	
				Means	SD
C.38.1	1	Growth of output	77.4	3.9015	1.00992
C.38.2	3	Contribution of labour	70.5	3.7340	1.16389
C.38.3	2	Contribution of capital	76.3	3.8522	1.17643
C.38.4	5	Contribution of human capital	67.9	3.6995	1.24811
C.38.5	3	Total Factor Productivity growth (TFP)	70.5	3.7340	1.16389

Notice a: The percentage of respondents who scored 4 “increase” and 5 “strongly increase”.

Source: Analysis of the data obtained from semi-structured interviews.

### **Interview Findings**

Interviewees were requested to indicate techniques they relied on most in the contribution of output factors and TFP growth involved in their economic growth. As they were not required to tick or rate a pre-formulated written set of answers, the relevant measure was the number of times any given technique was mentioned. The economy is composed of input resources and capabilities and capacities of physical, human capital and labour available to the community, and termed “factors of production”, and activities and events conducted by various institutions, units and establishments in the community and to crystallise these activities in three major economic areas: “investment, savings and consumption”. Accordingly, a product of economic processes is output and goods and services crystallised (Respondent M).

### **K.3.2.2 Macro-economic Reform Risks**

#### **Questionnaire Findings**

Respondents to the questionnaire survey a list of four questions-derived macro-economic risks. They were requested, with reference to the macro-economic reform, to rate degrees of concern on a 5-point rating scale. Based on the ranking and *per cent* of the macro-economic risks score, as presented in Table K 3.5, the macro-economic risks issues that concerned respondents the most were firstly that ‘Foreign rates’ (*per cent* 80.3). The next highest rank concerned ‘Indirect instruments of monetary policy’ (*per cent* 77.4). The third highest ranking is that ‘Commodity prices’ (*per cent* 64.1). Consistent with the previous study, Palmer (1971: 32) defines risk-taking as “the willingness to commit to a course of action which may result in rewards or penalties associated with success or failure”. Subsequently, Weston and Brigham (1979) argue that a firm’s capital structure represents the financial risk that firm could face. In other words, as stated by Barton and Gordon (1987), the amount of funds that could be borrowed by the companies depends, to some extent, on the amount of risk these companies can bear, and, therefore, the top management’s risk taking propensity will affect the firm’s capital structure.

**Table K 3.5 Descriptive Statistics for Macro-economic Risks**

Code	Rank	Statements	% <sup>a</sup>	Valid N=203	
				Means	SD
C.39.1	4	Interest rates	62.6	3.6601	1.19725
C.39.2	1	Foreign rates	80.3	3.9951	1.11470
C.39.3	3	Commodity prices	64.1	3.5764	1.28504
C.39.4	2	Indirect instruments of monetary policy	77.4	3.9458	1.28504

Notice a: The percentage of respondents who scored 4 “very concerned” and 5 “extremely concerned”.

Source: Analysis of the data obtained from semi-structured interviews.

### **Interview Findings**

The general managers of CBL were asked about the macro-economic reform risks which most concerned them. Since interviewees were not required to rank or order or rate risks, the relevant measure was simply the number of times any given risk was mentioned. Interest rates have a significant impact and substantial pricing of securities, the amendment to attract investment portfolios and savings or expulsion and to determine the level of the stock market, to attract capital investment, to facilitate bank credit profitability of the banking sector and growth rates in the national economy.

### K.3.2.3 The Most Problematic Issues/Obstacles for Conducting Business with Libya as a Country/Economy

#### Questionnaire Findings

Questionnaire respondents were presented with a list of fourteen questions-derived obstacles to conducting business with Libya as a country/economy. They were requested to rate degrees of concern with the obstacles on a 5-point rating scale. Based on the means and *per cent*, as presented in Table K 3.6, the areas seen as presenting the greatest obstacles were 'Inadequate supply of infrastructure' (mean 4.21, 87.1 *per cent*); 'Access to financing' (mean 4.18, 86.2 *per cent*); 'Voice and accountability' (mean 4.14, 84.2 *per cent*); 'Inefficient government bureaucracy' (mean 4.06, 82.3 *per cent*) and 'Corruption' (mean 3.89, 76.4 *per cent*). The statements, 'Crime and theft' (mean 1.10, 5.9 *per cent*) and 'Government instability/coups' (mean 2.12, 6.9 *per cent*) were ranked lowest and, therefore, these issues were considered by respondents least likely to obstruct business with Libya. Tulba and Fhaima (2004) argue that the Libyan economy achieved high growth rates during the 1970s (the first and second development plans), suffered negative growth rates in the early 1980s and achieved slightly positive rates between 1985 and 2002. However, it is argued that most of the objectives of the development plans have not been achieved due to the shortage of skilled and semi-skilled manpower in the Libyan public sector (Saleh, 2001) and the domination of the state over economic activities that led to the misuse of economic resources, lower productivity levels, higher production costs, lower quality, weak control in the public sector and lower return on capital (Alqadhafi, 2002).

**Table K 3.6 Descriptive Statistics for most Problematic Issues/Obstacles for Conducting Business with Libya as a Country/Economy**

Code	Statements	% <sup>a</sup>	Valid N=203	
			Means	SD
C.40.1	Policy instability	71.9	3.8227	1.18909
C.40.2	Inefficient government bureaucracy	82.3	4.0640	1.07207
C.40.3	Restrictive labour regulations	53.7	3.4138	1.28826
C.40.4	Inadequate supply of infrastructure	87.1	4.2069	0.94740
C.40.5	Inadequately educated workforce	53.7	3.4138	1.28826
C.40.6	Corruption	76.4	3.8818	1.01757
C.40.7	Foreign currency regulations	62.1	3.5714	1.26982
C.40.8	Poor work ethic of national labour force	37.5	3.1330	1.33759
C.40.9	Government instability/coups	6.9	2.1182	0.96770
C.40.10	Tax regulation	9.3	2.2217	1.05545
C.40.11	Crime and theft	5.9	1.9951	0.96214
C.40.12	Tax rates	32.0	2.7586	1.35919
C.40.13	Access to financing	86.2	4.1773	0.94820
C.40.14	Voice and accountability	84.2	4.1429	0.93039

Notice a: The percentage of respondents who scored 4 "obstacle" and 5 "major obstacle".

Source: Analysis of the data obtained from semi-structured interviews.

#### Interview Findings

Managers in the companies interviewed were asked about key problematic issues involved in business with the Libyan economy which most concerned them. Since interviewees were not required to rank the obstacles in order, the relevant measure was simply the number of times any given obstacle was mentioned. Inadequate supply of infrastructure, as reported in Table K 3.7, headed the list, followed by a lack of data and information required by investors (reported by seven respondents) and lack of coordination between administrative authorities and corruption (reported by six interviewees).

**Table K 3.7 Respondents' Views on most Problematic Issues/Obstacles for Conducting Business with Libya as a Country/Economy**

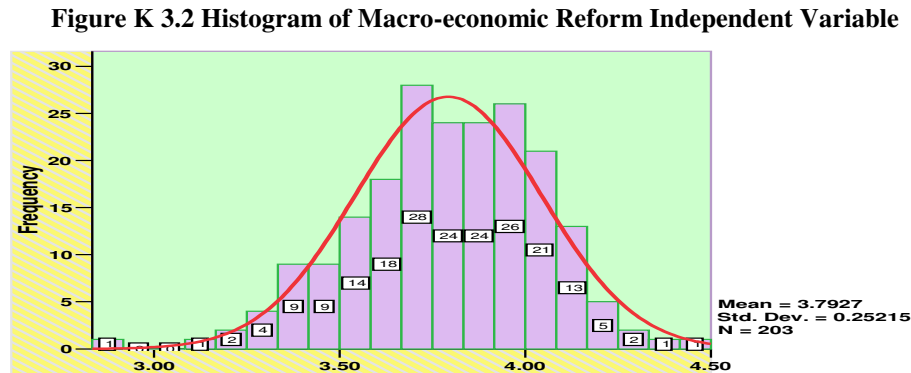
Obstacles	Valid N=12 interviews <sup>a</sup>	
	Number of Mentions	Per cent
Inadequate supply of infrastructure	8	66.7
Lack of data and information required by investors	7	58.3
Lack of coordination between the administrative authorities	6	50.0
Corruption	6	50.0
Policy instability	4	33.3
Access to financing	3	25.0

Notice a: Details totalled more than N = 12 and 100 *per cent* due to duplicate responses.

Source: Analysis of the data obtained from semi-structured interviews.

### K.3.2.4 Histogram of Macro-economic Reform Independent Variables

Figure K 3.2, labelled *Histogram*, illustrates frequency distribution of the normal distribution curve of macro-economic reform independent variables. SPSS draws a curve on the histogram to illustrate the shape of this distribution where residuals were occurring at (3.7927), beyond the right tail of the curve and many of the residuals are quite closely placed. Furthermore, some of the columns of residuals are above the curve and others below it.



Source: Developed from questionnaire survey data analysis.

### K.3.3 Financial Maturity Practice

#### K.3.3.1 The Choice of Sources of Funds

##### *Questionnaire Findings*

Respondents to the questionnaires were given a list of five questions-derived financial sources of funds. The respondents were asked to rate degrees of concern relating to these financial sources on a 5-point rating scale. The findings, presented in Table K 3.8, show respondents preferred to use in their companies 'Bank loans' (38.9 per cent), 'Retrained earning' (41.9 per cent), 'Trade credit (supplies)' (35.5 per cent), 'Government subsidies' (27.1 per cent) and 'Foreign sources' (19.7 per cent). Meanwhile, the most successful factor was rated as 'Retrained earning' (32.5 per cent), followed by 'Bank loans' (30.0 per cent). Michaelas (1998) argues that companies will be more dependent on bank credit as they develop. This may imply that Libyan companies prefer to be financed in order of inside funds, outside trade credit from suppliers, outside debt and outside equity is more favoured by non-manufacturing companies. 'Trade credit (supplies)' and 'Foreign sources' were ranked lowest and therefore these sources were considered the least preferred choice of funds of those listed.

**Table K 3.8 Descriptive Statistics for the Choice of Sources of Funds**

Code	Statements	Use			Success <sup>a</sup>		
		N	%	Valid N	N	%	Valid N
D.14.1	Bank loans	79	38.9	203	61	30.0	203
D.14.2	Retrained earning	85	41.9	203	66	32.5	203
D.14.3	Trade credit (supplies)	72	35.5	203	52	25.6	203
D.14.4	Government subsidies	55	27.1	203	55	27.1	203
D.14.5	Foreign sources	40	19.7	203	39	19.2	203

Notice a: Percentage of firms that score 3 for "used with a moderate degree of success" and 4 for "used with a great deal of success"; details totalled more than 100 per cent due to duplicate responses.

Source: Developed from questionnaire survey data analysis.

##### *Interview Findings*

Interviewees were asked how the results of choice of funds sources were used in the decision-making process. Since interviewees were not given a pre-formulated written set of answers, the relevant measure was the number of times any given use was mentioned. The source of finance was used in: "bank loans" (Respondent G); "retrained earning" of strategic planning (Respondent F); establishing "foreign sources" (Respondents C and E). Respondents (J) and (N), on the other hand, were unaware of the finance source utilised in their investment.

### K.3.3.2 The Frequency of Firms' Investment

#### Questionnaire Findings

Respondents to the questionnaires were presented with six questions-derived frequency of investment by firms and requested to rank them in relation to the stock market performance. Based on the *per cent* of frequency of firms' investment, as presented in Table K 3.9, the frequency of firms' investment that concerns respondents the most were that 'During the analysis of each investment project' (21.2 *per cent*). Analysis reflects that the highest ranked concern was 'Often (twice per year)' (20.2 *per cent*). These results were crosschecked with interview results revealing that most firms carefully select their fund sources when financing investment projects. According to Myers (2001), investment decisions can be affected by the use of long-term debt when shareholders might perceive that the gains from new investment will be used to pay off existing debtholders. This situation might lead shareholders to encourage managers to pass up profitable projects. He added that short-term debt could be used to mitigate the conflict between shareholders and debtholders.

**Table K 3.9 Descriptive Statistics for Frequency of Firms' Investment**

Code	Rank	Statements	Valid N=203	
			Per cent	Cumulative Per cent
D.15.1	6	Never	11.8	11.8
D.15.2	4	Rarely (once per year)	15.3	27.1
D.15.3	2	Often (twice per year)	20.2	47.3
D.15.4	3	Very often (approximately every three months)	17.7	65.0
D.15.5	5	Systematically (approximately every month)	13.8	78.8
D.15.6	1	During the analysis of each investment project	21.2	100.0
<b>Total</b>			<b>100.0</b>	

Source: Analysis of the data obtained from semi-structured interviews.

#### Interview Findings

Respondents in firms interviewed were requested to indicate the techniques they relied on most in a firm's investment pertinent to its financial maturity. Since interviewees were not given a pre-formulated written set of answers, the relevant measure was the number of times any use was mentioned. The most frequent reason revealed behind the occasional approach to a firm's investment was attributed during analysis of each investment project (Respondents C and F). As such, the improving financial performance has become one of the most significant objectives, if not the most, as described by the Respondent (J), "now we are required to improve the financial performance and generate profits to make the company attractive to investors, unlike the past when the profitability was not a priority".

### K.3.2.3 Comparison between Bank-based and Market-based Financial Systems for Promoting Long-term Economic Growth

#### Questionnaire Findings

Questionnaire respondents were presented with fourteen questions-derived comparisons between bank-based and market-based systems. They were requested, with reference to the which is better for promoting economic growth in the Libyan economy, to rate degrees of concern on a 5-point rating scale. Based on the means and percentage of bank-based ranging from 81.3 *per cent* to 29.6 *per cent* and market-based ranging from 80.8 *per cent* to 27.1 *per cent* score, as presented in Table K 3.10, the bank-based systems that concern respondents the most were that 'Mobilising saving' (mean 4.0739, 81.3 *per cent*), 'Regulatory structure' (mean 4.02, 79.3 *per cent*), 'Justifying problems associated with excessively powerful banks' (mean 3.10, 78.4 *per cent*) and 'Structure activity' (mean 3.92, 74.9 *per cent*). This was followed by market-based system issues that concerned respondents the most as firstly 'Identifying good investment' (mean 4.07, 80.8 *per cent*), then 'Allocating capital' (mean 3.99, 78.8 *per cent*), next 'Increasing transparency and accountability' (mean 3.95, 75.4 *per cent*) and finally 'Finance activity' (mean 3.84, 72.4 *per cent*).

In addition, these results provide some explanation as found in Demirgüç-Kent and Levine (2004: 1) who added: "Financial systems tend to be more market-based in higher income countries, where stock markets also become more active and efficient than banks. Financial systems also tend to be more market-based, even after controlling

for income, in countries with a common law tradition, strong protection of shareholder rights, good accounting standards, low levels of corruption, and no explicit deposit insurance”. The findings are in line, too, with the view of Levine and Zervos (1998) who explained that a stock market with greater liquidity implies faster economic growth no matter what the level of banking system development. Similar findings in the literature were found by Rajan and Zingles (1998) who empirically established that bank-based systems are better at promoting growth in countries with weak shareholder and poor legal systems and property rights. They further stated that market-based legal systems improve.

**Table K 3.10 Descriptive Statistics for Comparison between Bank-based and Market-based**

Code	Statements	Bank-based				Market-based			
		Rank	Means	SD	% <sup>a</sup>	Rank	Means	SD	% <sup>a</sup>
D.16.1	Mobilising savings	1	4.0739	1.03859	81.3	5	3.7143	1.10227	70.0
D.16.2	Identifying good investment	7	3.5517	1.25904	60.6	1	4.0690	1.03655	80.8
D.16.3	Allocating capital	5	3.7734	1.08449	70.9	2	3.9901	1.11244	78.8
D.16.4	Providing risk management tools	9	3.4187	1.38487	51.7	6	3.7291	1.20662	67.4
D.16.5	Exerting sound corporate control	8	3.4975	1.29880	58.1	10	3.2660	1.39596	49.7
D.16.6	Justifying problems associated with excessively powerful banks	3	3.9951	1.04122	78.4	11	3.2562	1.30627	46.2
D.16.7	Increasing transparency and accountability	6	3.6946	1.23694	65.5	3	3.9507	1.09794	75.4
D.16.8	Structure activity	4	3.9212	1.19558	74.9	14	2.8867	1.21132	27.1
D.16.9	Structure size	10	3.2512	1.41454	50.7	13	2.8325	1.33925	29.5
D.16.10	Structure efficiency	11	3.3005	1.35462	46.3	12	3.0985	1.34243	37.9
D.16.11	Structure regulatory	2	4.0246	1.07831	79.3	8	3.5222	1.26775	57.6
D.16.12	Finance activity	13	2.8621	1.32407	31.1	4	3.8374	1.21793	72.4
D.16.13	Finance size	14	2.8571	1.26032	29.6	9	3.4581	1.39020	54.2
D.16.14	Finance efficiency	12	2.9754	1.36954	38.4	7	3.6108	1.25125	63.1

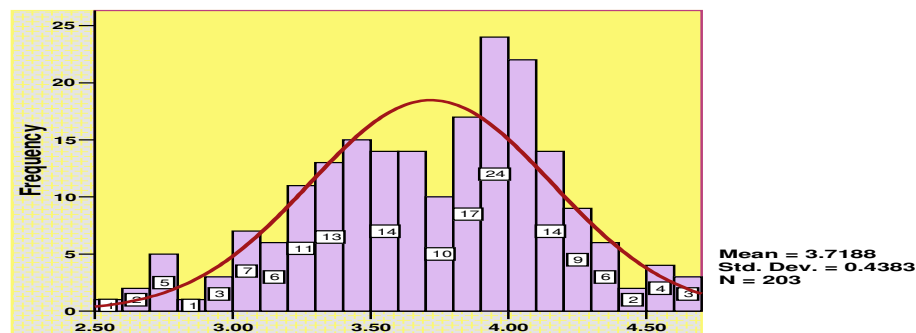
Notice a: Percentage of comparison that score 1 “very unimportant” and 5 “very important”.

Source: Analysis of the data obtained from semi-structured interviews.

#### K.3.2.4 Histogram of Financial Maturity Variables

Figure K 3.3, labelled *Histogram*, illustrates the frequency distribution of the normal distribution curve of financial maturity independent variables. SPSS draws a curve on the histogram to demonstrate the shape of this distribution. Residuals were occurring at (3.7188), beyond the right tail of the curve. Additionally, many of the residuals are fairly close. Finally, some of the columns of residuals are above the curve and others are below it.

**Figure K 3.3 Histogram of Financial Maturity Independent Variables**



Source: Developed from questionnaire survey data analysis.

#### K.3.4 Practices of Libyan Stock Market Performance

The aim of this section is to present and analyse data related to the research’s objective. Data was obtained from both self-administered questionnaire surveys and semi-structured interviews regarding the process of the practices of the Libyan stock market performance. The section is divided into seven main subsections. Subsection K 3.4.1 describes the ranking of most and least important for the successful establishment of a stock market in the Libyan economy. Subsection K 3.4.2 presents the importance of institutional source which may affect the stock market regarding the international business environment. Subsection K 3.4.3 presents the stock market effect. Sub-section K 3.4.4 explains the financial crisis. Subsection K 3.4.5 reveals obstacles and constraints of stock market performance. Subsection K 3.4.6 considers the best practise model experiments for the Libyan stock

market, while results of stock market assessment are reported in subsection K 3.4.7. Finally, Subsection K 3.4.8 presents the histogram of stock market performance variables.

### K.3.4.1 Establishment a Stock Market in the Libyan Economy

#### *Questionnaire Findings*

Questionnaire respondents were presented with a list of ten questions-derived successful establishment of a stock market in the Libyan economy and requested to rate degrees of concern on a 5-point rating scale. Based on the rank and means, the output of tests, as presented in Table K 3.11, indicated that only four sources had a mean of more than 3.00. These sources are ‘Geographical location’ (mean 3.89); ‘Proximity to international markets’ (mean 3.80); ‘Lack of collateral (security)’ (mean 3.35); ‘Provide new technology as the market demands’ (mean 3.36); ‘Lack of quality company’ (mean 3.09). This finding is consistent with the conclusion of World Bank (1994) that the central geographical location of Libya between the developed economies in the West and Growing economies of North Africa has reduced transport costs and increased the significance of the Libyan oil market, which rise more foreign currency to the country. The establishment of stock markets in developing countries and the opening of them to foreign security house as well as to foreign portfolio investors can be viewed as a part of this global liberalisation project (Singh, 1992). The other six sources, however, had means of less than 3.00.

**Table K 3.11 Descriptive Statistics for Ranking of Successful Adoption of a Stock Market**

Code	Statements	Valid N=203		
		Rank	Means <sup>a</sup>	SD
E.19.1	Lack of quality companies	4	3.0887	1.40086
E.19.2	Lack of collateral (security)	6	2.7291	1.29374
E.19.3	Lack of good trading record	8	2.5862	1.19247
E.19.4	Provide new technology as the market needs	3	3.3547	1.36517
E.19.5	Poor relationships with banks	10	2.4975	1.13615
E.19.6	Geographical location	1	3.8867	1.13101
E.19.7	Deterioration in the state of the economy	9	2.5419	1.16550
E.19.8	The suppliers of finance are in small and/or underdeveloped sector	5	2.8966	1.31033
E.19.9	Proximity to international markets	2	3.7980	1.13609
E.19.10	Inability to convince lenders of the profitability of the investments	7	2.6453	1.27517

Notice a: The percentage of respondents who scored 4 “agree” and 5 “strongly agree”.

Source: Analysis of the data obtained from semi-structured interviews.

#### *Interview Findings*

Respondents interviewed in the stock market were requested to indicate techniques they relied on most in the establishment of a stock market. They were not required to tick or rate a pre-formulated written set of answers, the relevant measure was the number of times any given technique was mentioned. The stock market is highly critical of Libyan economic development due to the absence of stock market sources which may have negative effects (Respondent B). This may additionally encourage many significant reform programmes such as deregulation, privatisation and liberalisation, attracting foreign capital investment and establishing free zones (Respondent E). This highlights the significance of the role that could be played by the existence of an effective market for securities in Libya in the process of economic and social development especially given the natural and human resources enjoyed by Libya's excellent geographical location, near the coasts of the southern shores of Europe and, therefore, in the proximity of African and European markets (Respondents M and F). This, in addition to the availability of natural resources such as oil and gas, and chemical products, iron and steel products, provides opportunities for investment capital in the most significant areas: manufacturing, construction, fishing and desert tourism, communications and aviation industries based on oil (Respondent D).

### K.3.4.2 International Business Environment

#### Questionnaire Findings

Questionnaire respondents were presented with a list of eleven questions-derived sources of information regarding the international business environment within the Libyan economy and requested to rate degrees of concern on a 5-point rating scale. Based on the rank and means, the output of tests, as presented in Table K 3.12, indicated that only five sources had a mean of more than 3.00: 'Companies' personnel abroad' (mean 4.05); 'Companies' personnel at headquarters' (mean 3.10); 'Banks operating locally and abroad' (mean 3.73); 'International organisations' (mean 3.44); 'Other companies operating locally and abroad' (mean 3.09). According to law number 5 in 1997, any investment project has to contribute to the economy by: (1) increasing the export of goods; (2) providing work opportunities for Libyans, enabling them to gain technical experience and to use modern technology; (3) providing services to the national economy; (4) strengthening the link between the existing economic activities; (5) making use or help in making use of local raw materials; (6) contributing to the growth and development of the remote or underdeveloped areas. In addition, the investment project may not be nationalised, seized, frozen or subjected to actions of the same impact except through the passing of a law or by a court decision. The last six sources, therefore, had a mean of less than 3.00.

**Table K 3.12 Descriptive Statistics for International Business Environment**

Code	Statements	Valid N=203		
		Rank	Means <sup>a</sup>	SD
E.20.1	Companies' personnel at headquarters	2	3.9901	1.13447
E.20.2	Companies' personnel abroad	1	4.0542	1.09545
E.20.3	Banks operating locally and abroad	3	3.7340	1.27356
E.20.4	Other companies operating locally and abroad	5	3.1527	1.34287
E.20.5	Media (e.g. television, radio, newspapers)	6	2.7980	1.19139
E.20.6	Trade associations	9	2.1232	0.97473
E.20.7	International organisations (e.g. International Monetary Fund)	4	3.4433	1.33145
E.20.8	Business magazines	11	1.8670	0.89942
E.20.9	Academics	7	2.5665	1.16859
E.20.10	Libyan embassies abroad	10	1.9951	0.96214
E.20.11	Governmental domestic agencies (e.g. Libyan Investment Board)	8	2.2315	1.06268

Notice a: Percentage of comparison that score 1 "very unimportant" and 5 "very important".

Source: Analysis of the data obtained from semi-structured interviews.

#### Interview Findings

Respondents interviewed in the business arena were additionally asked from where they obtained information about the international business environment. Since interviewees were not required to rate or tick a pre-formulated written set of answers, the relevant measure was the number of times any given source was mentioned. Interview findings, as displayed in Table K 3.13, suggested a large degree of dependence on human resources (i.e. a company's personnel at headquarters and abroad, managers of banking and companies locally and overseas, academics). A number mentioned non-human sources (i.e. media, magazines, trade and international organisations) as available sources of business information.

**Table K 3.13 Respondents' Interviews for International Business Environment**

Source of business information	Valid N=11 interviews <sup>a</sup>	
	Number of Mentions	Per cent
Any human source	11	100.0
Any non-human source	3	27.3

Notice a: Details totalled more than N = 11 and 100 per cent due to duplicate responses.

Source: Analysis of the data obtained from semi-structured interviews.

Interviewees were further required to explain why they used a particular source within the international business environment. The most significant external bank systems were reported to be "more sensitive" to political policy change than other concerns (Respondent E) and businesses within similar spheres were reported as available sources since they have "similar interests" (Respondent D). The other available source was insignificant to international business for the following reasons: media was used merely as an "indicator" but not as a major source (Respondent G); Libyan embassies were provided as "politically oriented" (Respondent L); business magazines were considered to introduce "general" information (Respondent J). Furthermore, the other sources

were not perceived as significant to respondents due to the view that academics may lack “specific knowledge” and that it was difficult to “judge” the “quality” of such individuals (Respondent M). Similarly, the government’s “capability” and external consultants were also considered as hard to judge. Such agencies and consultants were thought not to take business-specific characteristics into account when introducing investment (Respondents C and K).

### K.3.4.3 Stock Market Effect

#### Questionnaire Findings

Respondents to the questionnaires were presented with a list of three questions-derived by political, financial, cultural events and requested, in relation to the stock market effectiveness, to rate degrees of concern on a 5-point rating scale. Based on the ranking and percentage of effective scores, as shown in Table K 3.14, the political events that concerns respondents the most were ‘Revolutions, political instability, riots, corruption, expropriation and terrorism’ (75.4 *per cent*). The second highest ranked concern was ‘Financial events’ (71.5 *per cent*). The statement, ‘Cultural events (e.g. language, education, religion)’ (62.6 *per cent*) was ranked lowest. The remaining respondents represent other events such as ‘Landslides; hurricane or flooding; earthquakes; volcanic activity’ (10.8 *per cent*). Questionnaire respondents were additionally required to rate their agreement that a political impact stock market would pose a threat to their economy. It is further evident that cultural factors were found to have a less significant impact than political and finance events. This suggests that people take them into account largely for their economic conditions. Engrman and Sokoloff (1997; 2002), Acemoglu et al. (2001) and Easterly and Levine (2003) show that political stability, legal system, cultural and geographical factors influence the financial system and are required to understand more about the role of financial factors in the process of economic growth rate.

**Table K 3.14 Descriptive Statistics for Stock Market Effect**

Code	Statements	% <sup>a</sup>	Valid N=203		
			Rank	Means	SD
E.21.1	Political events (e.g. revolutions, political instability, riots, corruption, expropriation, and terrorism)	75.4	1	3.9310	1.08325
E.21.2	Financial events (e.g. foreign exchange rates, interest rates or commodity prices currency inconvertibility, economic sanctions, restrictions on ownership, and taxation)	71.5	2	3.8818	1.15862
E.21.3	Cultural events (e.g. language, education, religion)	62.6	3	3.6798	1.13055
E.21.4	Other events <sup>b</sup> (e.g. natural events such as: landslides; hurricane or flooding; earthquakes; volcanic activity)	10.8	4	3.7742	1.11683

Notice a: The percentage of respondents who scored 4 “very concerned” and 5 “extremely concerned”.

Notice b: Added from responses, with 32 responses from a total of 203 questionnaires distributed.

Source: Analysis of the data obtained from semi-structured interviews.

#### Interview Findings

Interviewees were further required to explain their concerns about stock market effectiveness. Nearly all those questioned had difficulty in responding. Accordingly, their concerns were “general” and could not be expressed in terms of specific effects that might cause constraints upon their operations.

### K.3.4.4 Financial Crisis

#### Questionnaire Findings

Respondents to the questionnaires were presented with eleven questions-derived sources of financial crisis and were requested to rate their degrees of concern on a five-point rating scale, where 1 stood for “not concerned” and 5 stood for “extremely concerned”. Based on the mean and *per cent* of financial crisis scores, as presented in Table K 3.15, the financial crises that concern respondents, in descending order were: ‘Economic sanctions’ (mean 4.21, 90.2 *per cent*); ‘Political instability’ (mean 4.14, 87.7 *per cent*); ‘Wars’ (mean 4.08, 84.7 *per cent*); ‘Demonstrations, riots and insurrection’ (mean 4.01, 80.8 *per cent*); ‘Terrorism’ (mean 3.71, 62.5 *per cent*); ‘Corruption’ (mean 3.17, 42.9 *per cent*); ‘Investment climate’ (mean 2.77, 27.6 *per cent*); ‘Currency inconvertibility’ (mean 2.57, 20.7 *per cent*); ‘Taxation restrictions’ (mean 2.51, 17.7 *per cent*); ‘Ownership



and/or personnel restrictions' (mean 2.47, 15.8 *per cent*); 'Import and/or export restrictions' (mean 2.44, 14.3 *per cent*). On the other hand, Fayad (2000) states that the Libyan economy was affected by the world recession in the 1980s and, therefore, the Libyan government was unable to fund its development plans and, as a consequence, many projects were cancelled.

**Table K 3.15 Descriptive Statistics for Relative Importance of Financial Crisis**

Code	Statements	%	Valid N=203		
			Rank	Means <sup>a</sup>	SD
E.22.1	Political instability	87.7	2	4.1429	0.98719
E.22.2	Economic sanctions	90.2	1	4.2118	0.94369
E.22.3	Currency inconvertibility	20.7	8	2.5714	1.21402
E.22.4	Import and/or export restrictions	14.3	11	2.4433	1.11270
E.22.5	Ownership and/or personnel restrictions	15.8	10	2.4680	1.14438
E.22.6	Investment climate	27.6	7	2.7734	1.30037
E.22.7	Terrorism	62.5	5	3.7094	1.20200
E.22.8	Demonstrations, riots and insurrection	80.8	4	4.0099	1.08996
E.22.9	Corruption	42.9	6	3.1576	1.35879
E.22.10	Wars	84.7	3	4.0788	1.01166
E.22.11	Taxation restrictions	17.7	9	2.5123	1.16619

Notice a: Respondents ranked the relative importance of eleven sources ranging from the "most important" to "least important", thus a higher *mean* indicates greater importance.

Source: Analysis of the data obtained from semi-structured interviews.

### **Interview Findings**

Interviewees were asked how the results of financial crisis affected their decision-making process. As they were not given a pre-formulated written set of answers, the relevant measure was the number of times any given aspect was mentioned. Key reasons behind financial crisis were mentioned as: "political instability" (Respondent F); "economic instability" (Respondent M). The IMF pointed out in 1998 that lack of economic stability is one of the most significant factors behind financial crisis; "investment climate" of strategic planning (Respondent D); "corruption" is economic reform programme effective (Respondent K).

### **K.3.4.5 Obstacles and Constraints of Stock Market Performance**

#### **Questionnaire Findings**

Respondents to the questionnaires were presented with nine questions-derived potential obstacles and constraints of stock market performance to rate degrees of concern on a 5-point rating scale. Based on the mean and *per cent* of obstacles of the stock market score, as presented in Table K 3.16, stock market obstacles that concern respondents, in descending order, were: 'Excessive regulations and bureaucracy' (mean 4.15, 84.2 *per cent*); 'Lack of distinct monetary policies in relation to exchange rate' (mean 3.94, 75.4 *per cent*); 'Lack of data and information' (mean 3.77, 68.5 *per cent*); 'Disorganisation and corruption within financial institutions' (mean 3.55, 61.1 *per cent*); 'Political/business risks' (mean 3.40, 55.2 *per cent*); 'Oil price shocks' (mean 3.30, 51.7 *per cent*); 'Paucity of discussion stock market performance' (mean 3.23, 48.7 *per cent*); 'Weaknesses in skills within the workforce' (mean 3.11, 44.3 *per cent*). It was reported in Chapter Two that the oil discovery had brought to light a number of problems. The small population, which had been an advantage when the economy largely depended on foreign aid, became a handicap when the demand for non-agricultural labour suddenly increased (Wright, 1969). Lack of experienced management, the shortage and cost of skilled labour, competition from foreign goods and the need to import many raw materials, meant that the country's industry was in a desperate need of state support and protection for healthy survival (Wright, 1969).

**Table K 3.16 Descriptive Statistics for Obstacles and Constraints of Stock Market Performance**

Code	Statements	% <sup>a</sup>	Valid N=203	
			Means	SD
E.23.1	There are no clear monetary policies in relation to the exchange rate	75.4	3.9409	1.10644
E.23.2	There are high rates of taxes and tariffs	43.8	3.1330	1.35962
E.23.3	Disorganisation and corruption exists in financial institutions	61.1	3.5468	1.33184
E.23.4	There is excessive regulation and bureaucracy	84.2	4.1478	0.93228
E.23.5	There is a lack of data and information	68.5	3.7685	1.20666
E.23.6	There is a lack of discussion on stock market performance	48.7	3.2266	1.40645
E.23.7	There are weaknesses in skills within the workforce	44.3	3.1133	1.37947
E.23.8	There are political/business risks	55.2	3.3793	1.39268
E.23.9	Oil price shocks	51.7	3.2956	1.38640

Notice a: The percentage of respondents who scored 4 “obstacle” and 5 “major obstacle”.

Source: Analysis of the data obtained from semi-structured interviews.

### **Interview Findings**

Interviewees were required to explain their concerns about negative effects of the obstacles of a stock market. Since interviewees were not required to rank in order or rate problems, the relevant measure was simply the number of times any given problem was mentioned. Primary reasons behind the absence of a stock market which causes many negative effects were mentioned as: unclear political and economic environment (Respondent M); delayed deregulation and privatisation programme (Respondents H and L); increase in the number of bankrupt companies in the long-term (Respondent J); led to increase in the risk of financial investment (Respondent C); scarcity of data and information (Respondent E); lack of accounting disclosure and transparency (Respondent K); oil price shocks (Respondent D).

### **K.3.4.6 Lessons which Could be Learned from the Experience of Other Countries**

#### **Questionnaire Findings**

Questionnaire respondents were presented with a list of five questions-derived mutually exclusive choices of best model experiments for Libyan stock market performance. Based on rank the rating used was the mean and *per cent*. Findings are presented in Table K 3.17. Respondents were most concerned with ‘Middle Eastern and North African’ countries first (mean 4.10, 85.7 *per cent*), ‘Central and Eastern European’ countries second (mean 3.92, 74.9 *per cent*), ‘Far Eastern’ third (mean 3.76, 68.0 *per cent*), Latin American fourth (mean 3.56, 56.1 *per cent*). The least other ranked stock markets practice experience, however, was the ‘Indian subcontinent’ (mean 3.18, 42.9 *per cent*).

**Table K 3.17 The Best Practise Model Experiments for the Libyan Stock Market**

Code	Statements	Valid N=203			
		Rank	% <sup>a</sup>	Means	SD
E.24.1	Middle Eastern and North African	1	85.7	4.0985	1.01968
E.24.2	Far Eastern	3	68.0	3.7635	1.22404
E.24.3	Indian Subcontinent	5	42.9	3.1823	1.30546
E.24.4	Central and Eastern European	2	74.9	3.9212	1.13613
E.24.5	Latin American	4	56.1	3.5567	1.19839

Notice a: The percentage of respondents who scored 4 “agree” and 5 “strongly agree”.

Source: Analysis of the data obtained from semi-structured interviews.

### **Interview Findings**

Respondents interviewed within the Libyan stock market were asked to indicate the models they relied on most in learning from the experience of other countries within the domestic stock market area. Since interviewees were not required to tick or rate a pre-formulated written set of answers, the relevant measure was the number of times any given model was mentioned. Table K 3.18 demonstrates that interview findings confirm findings from the questionnaires; most interviewees were likely to rely on one or more developing country’s model.

**Table K 3.18 Respondents' Interviews to Adopted Models**

Models	Valid N=12 interviews <sup>a</sup>	
	Number of Mentions	Per cent
Developing country	10	83.3
Developed country	7	58.3

Notice a: Details totalled more than N = 12 and 100 *per cent* due to duplicate responses.

Source: Analysis of the data obtained from semi-structured interviews.

Interviewees were additionally required to mention reasons for relying on developing country models more often than developed country models: Libya began its stock market later than most emerging countries (i.e. Egypt, Saudi Arabia, Jordan, Tunisia, UAE, etc) (Respondent M). The first practical action of the state towards a stock market started in 2006 following the new economic reform programme of 1999 *vis a vis* private sector enterprises in 2000 by establishment of the General Board of Ownership (GBO)<sup>68</sup> (Respondents B and H); assessing the strengths and weaknesses of stock markets in MENA countries (Respondent C). Furthermore, to complete the picture, there is a model, modernisation, and this model is close to Libya, which depends on stabilisation of the political vision with the events of economic reforms. This model was applied in China (Respondent M), so there is the circulation of policy power (Respondent B), the task of development in the issue of economic reform, if we report the recent economic development Libya evolved in 2004 to 2006 significantly (Respondent H). What happens then in Libya needs a certain degree of attention, the model of modernisation opportunity for technical institutions within Libyan society, besides agreement on a political vision, and identifying whether we require dialogue to reform or modernise, and finally the vision of political action. Perhaps the issue is not economic but primarily we need to modernise the political wheel (Respondents A and M).

#### K.3.4.7 Report of the Stock Market Assessment

Respondents to the questionnaires were required to state the title(s) to which the outcomes were reported. Findings within the organisation that assign formal responsibility to personnel in order to conduct the stock market performance are presented in Table K 3.19. 78.6 *per cent* of respondents reported to 'General managers', 64.3 *per cent* to a 'Chairperson or chief executive' (50.0 *per cent*), (42.9 *per cent*) 'Investment manager', (35.7 *per cent*) 'Planning manager', 'Financial management' 28.6 *per cent*, 'Risk management' 14.3 *per cent*, and 'Legal management' 7.1 *per cent*.

**Table K 3.19 Reporting Results of Stock Market Assessment**

Code	Statements	Valid N=14 <sup>a</sup>	
		N	Per cent
E.25.A	General manager	11	78.6
E.25.B	Chairperson	9	64.3
E.25.C	Chief executive	7	50.0
E.25.D	Investment manager	6	42.9
E.25.E	Planning manager	5	35.7
E.25.F	Financial management	4	28.6
E.25.G	Risk management	2	14.3
E.25.H	Legal management	1	7.1

Notice a: Details added from companies to more than N = 14 or 100 *per cent* due to reproduction responses.

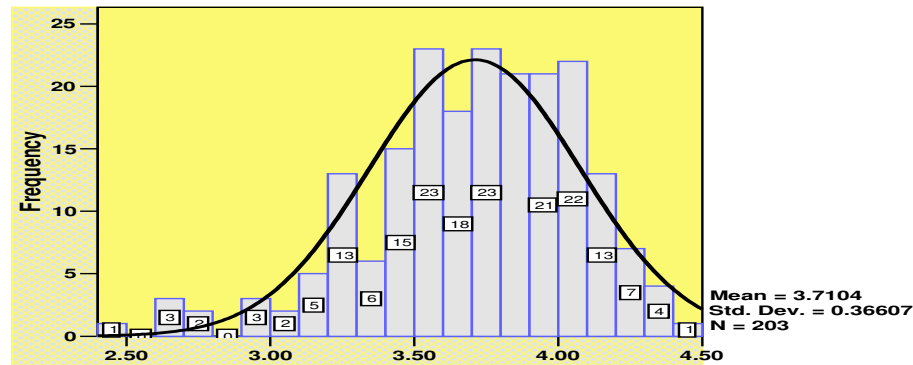
Source: Analysis of the data obtained from semi-structured interviews.

#### K.3.4.8 Histogram of Stock Market Performance Variables

The *Histogram* in Figure K 3.4 displays the *frequency* distribution of the normal a bell-shaped distribution curve of stock market performance dependent variables. *SPSS* draws a curve on the histogram to demonstrate the shape of this distribution the residual were occurring at (3.7104), beyond the right tail of the curve. Also, many of the residuals are fairly close. Furthermore, some of the columns of residuals are above the curve and others are under it.

<sup>68</sup> GBO was established by the Libyan government, which is directly affiliated to the GPC to implement and control privatisation in accordance with GPC decree no.198 of 2000.

Figure K 3.4 Distribution of SMP Dependent Variables



Source: Developed from questionnaire survey data analysis.

#### K.4 The Data Collected by Interviews

This part encompasses the analysis and interpretation of data gathered from this study, as outlined in the methodology and presentation chapters<sup>69</sup>. Specifically, the appendix contains the following points:

- An analysis of the interviews conducted with Libyan experts to investigate the impact of an emerging stock market in the Libyan economy
- Survey statements investigated by managers of financial and non-financial institutions.

As mentioned in Chapter Six, a series of semi-structured interviews were used to gather data concerning the research questions related to this part of the study, from each participant within the research study. Interviews were conducted between September 2007 and the end of January 2008. Each interview included 8 questions and took, on average 30 to 60 minutes. Three significant factors helped the researcher to conduct interviews successfully. Firstly, the interviews were conducted in Arabic i.e. the researcher's mother tongue, which enabled the researcher to understand each statement taken during interviews. Secondly, the researcher believed much of what Easterby-Smith et al. (2002) emphasised regarding the importance of arranging interviews with enough time between them to allow the researcher sufficient opportunity to write or type a transcript or set of notes and to consider the data, and to analyse and explore some of the related issues. Finally, the researcher had predetermined the questions to be asked in all the interviews, since their nature was semi-structured, which facilitated the analysis process to some extent. All interview participants provided valuable and interesting insights for the research project. Interview questions were divided into three sections. Section K 4.1 represented the importance of establishing a stock market in Libya. Section K 4.2 described the relationship between the Libyan economic reform programme and the stock market. Section K 4.3 illustrated the expected role of policies of the Libya stock market.

##### K.4.1 The Importance of Establishing a Stock Market in Libya

According to the first question related to establishing a stock market in Libya, Table K 4.1 shows that most interviewees agreed that the stock market is very important to the Libyan economy and is needed for increasing the growth rate because the absence of a stock market causes many negative effects. Some argued that it caused an increase in the number of bankrupt companies over a period and encouraged the capital sums to invest abroad.

<sup>69</sup> The reasons favouring the use of personal interview method: the nature of the research, which may sometimes require accurate and detailed information, lack of information, the desire to acquire new information that has not been published and the desire to verify information related to the study.

**Table K 4.1 Respondents' Responses to Question 1**

Code	Statements	Valid N=14 interviews <sup>a</sup>	
		Number of mentions	Per cent
Q 1	Do you think a stock market is needed in Libya? And why?		
	Very Important	12	86
	Not Important	2	14
	<b>Total</b>	<b>14</b>	<b>100</b>

Notice a: Details totalled more than N = 14 and 100 *per cent* due to duplicate responses.

Source: Analysis of the data obtained from semi-structured interviews.

In response to question two (Table K 4.2), most participants believe that the stock market should be independent and not controlled by the Libyan Central Bank, but that it might be inspected by other institutions, such as the Economic Fund and Social Development or the Ministry of Economy and Trade to protect the investors.

**Table K 4.2 Respondents' Responses to Question 2**

Code	Statements	Valid N=14 interviews <sup>a</sup>	
		Number of mentions	Per cent
Q 2	The majority of Libyans state "The Libyan Central Bank control the Libyan stock market" Do you agree with that? Why? If you disagree, do you think the stock market should be independent or controlled by others (the Economic Fund and Social Development or Ministry of Financial Control?		
	• Controlled by Libyan Central Bank	2	14.3
	• Independent without any control	4	28.6
	• Independent and inspected by the Economic Fund and Social Development	1	07.1
	• Independent and inspected by the Economy and Trade ministry	7	50.0
	<b>Total</b>	<b>14</b>	<b>100.0</b>

Notice a: Details totalled more than N = 14 and 100 *per cent* due to duplicate responses.

Source: Analysis of the data obtained from semi-structured interviews.

As mentioned early in Chapter Two, the Libyan General Peoples' Committee issued Resolution 49 in 2002 concerning the executive regulations of law 21 in 2001. Articles 48-50 of this resolution allow the establishment of a stock market. Based on this resolution and Resolution 242 in 2003, the committee awarded the Libyan Central Bank the right to establish a stock market. However, Resolution 105 in 2005 cancelled that decision and gave it to the Libyan General Peoples' Committee for Economy and Trade. Consequently, the Libyan stock market did not start working process until the end of 2006. Respondent interviewees were asked in question three about the main prerequisites for a successful stock market in Libya. Interview findings mentioned that the Libyan stock market is expected to encourage investors to invest in securities (Respondent A), regulate the issue, and dealing of securities, allow easy liquidation of securities (Respondent D) and improve the level of financial disclosure and competition between Libyan economic sectors (Respondent K). Interviewees were further required to explain their concerns regarding the key prerequisites. Libya, like many other developing countries, has made remarkable progress in privatising its enterprises by transferring ownership from the state to private citizens (Respondent H). This has created many new shareholders (Respondent J). Now Libya needs to develop the stock market and related institutions to handle the large volume of share trading that is likely to occur after further privatisation programmes (Respondent L).

#### **K.4.2 The Relationship between the Libyan Economic Reform Programme and the Stock Market**

Interviewees were required to explain why there are differences among countries with regard to the information needed from the market-based system (Respondent F) and any international comparison of stock markets should take into account socio-economic effects, especially the change from a centrally-planned to a market-based system (Respondent F). These differences are due to factors such as national culture, corporate culture, legislation and national institutions. The change in the market-based system in the developing economy of Libya, has experienced a huge reform from a centrally-controlled to a market-based system and has the distinctive characteristic of being heavily reliant on the oil industry as the main resource for the economy (Respondent M). Table K 4.3 shows that, when an investment bank brings a new company to flotation, its shares are issued on the primary market. If this company subsequently decides to raise further finance by issuing bonds, these are also sold on the primary market. Similarly, if a company decides to expand using either equity finance or bond finance, the additional shares or bonds are traded on the primary market. The secondary market is that in which existing securities are subsequently traded. As mentioned in Chapters Two and Five, the Libyan stock market will

play an important role in Libyan economic growth rate by speeding up economic reform programmes, increasing the GDP, helping in restructuring the Libyan economy and other reform programmes to proceed faster.

**Table K 4.3 Respondents' Responses to Question 4**

Code	Statements	Valid N=14 interviews <sup>a</sup>					
Q 4	What is the relationship between the Libyan economic reform programme and stock market performance and could you please indicate the benefits of that relationship. How significant is the impact of the stock market in relation to the following areas:	Number of mentions	Per cent				
				High impact	Low impact	Do not know	No impact
	Financial turnover of the organisation	4	3	2	1	10	71.4
	Reputation of the organisation	6	2	4	0	12	85.7
	Quality of goods and products	6	1	3	1	11	78.6
	Profitability	7	3	2	2	14	100
	Productivity	8	1	3	0	12	85.7
	Market share	3	3	5	2	13	92.9
	Employee satisfaction	4	2	1	1	8	57.1
	Cost reduction	7	1	3	2	13	92.9

Notice a: Details totalled more than N = 14 and 100 *per cent* due to duplicate response.

Source: Analysis of the data obtained from semi-structured interviews.

Respondents interviewed were asked in question five to indicate the effectiveness of the post-sanction economic reforms in transforming the Libyan economy from bank-based to one that is market-based. Respondent D explained that different sanctions were imposed on Libya by the US and the UN. The US banned imports of Libyan crude oil in 1981 and extended it later to include direct trade, commercial contracts and travel activities. The UN imposed an embargo in 1992 after the accusation of two Libyan citizens of involvement in the crash of an American aeroplane in Scotland in 1988. The UN embargo was eased in 1999 and completed in 2003 after the country accepted responsibility for the crash, while the US embargo was ended in 2004 (Respondent A).

Interviewees were additionally required to explain their concerns, especially in the way the former socialist and transition countries have demonstrated the relationship between economic reforms and changes in the market-economy system. China, for example, which is considered to be one of the fastest-growing economies in the world (Respondent M), provides an example of the impact of business environment change on economic reform programme. Respondent D argued that the phenomenon of economic reform from a centrally-planned to a capitalist system had caught the attention of researchers, especially in the field of micro and macro-economics, since the start of economic reforms in 1979. Respondent M highlighted the main features of the Chinese accounting system, including the role of marketing policy, the regulatory environment, ownership methods, and recent improvement in the system. Respondents M and H argued that the continuing change in the Chinese economic system since liberalisation has influenced economic reform practices. Interviewees were also required to explain concerns relating to the Libyan economy framework. The process of transforming the Libyan economy from a centrally-planned to a market-based system, which was launched in the late 1980s and involved fundamental change in the regulatory context, has terminated domination of the state-owned sector over the Libyan market, which proved to be responsible for many deficiencies obstructing the growth of the economy (Respondent H and M). Hence, a new business environment has been created, within which Libyan companies, especially those that are state-owned, encounter increased competition causing deterioration in their financial performances (Respondent F).

Interviewees were additionally required in question six to explain why financial maturity has altered. Respondent M emphasised that Libyan financial maturity has changed as a result of economic policies. After the revolution the government required all banks operating in Libya to be under state control (Respondent E). Respondents A and E argued that by 1970 all banks became state-owned enterprises, including foreign banks whose names were then changed. For instance, Barclays became Al-Jamahiriya and Banco Di Roma became Al-Ummah Bank. By the process of merging, the number of commercial banks was reduced to five: three of these (National Trade Bank, Jamahiriya Bank and Ummah Bank) are completely state-owned and at least 70 *per cent* of the shares in the other two (Sahara Bank and Wahda Bank) are state-owned. Moreover, the Bank of Commerce and Development was established in 1996 and currently comprises five branches and four agencies in different regions in Libya. This bank is considered to be the fastest growing bank in Libya, with advanced technology and services crowned by the issuing of Visa Cards for the first time in the country in 2005. Interviewees were further required to explain why, despite government efforts to build a strong financial sector that could support private

investment initiatives (Respondent F), the Libyan banking sector plays no significant role in improving the economy and is still in its very early stages compared to those of developed and developing countries (Respondent E). However, this liquid industry is very promising for foreign investors as it generates 60 to 70 billion US\$ in revenue each year (Respondent C).

#### K.4.3 The Expected Role of Policies of the Stock Market in Libya

In question seven respondents were asked about the type of techniques they use in their company's activities in the financial market and whether the decision-making process of the financial market copes with the firms in the market. As pointed out by Respondents D and F, there is no evidence of the use of so-called advanced management decision techniques, such as activity-based costing and the balanced scorecard, the financial perspective from the view of the shareholders, the customer perspective, the strategy for creating value in the customer's view, the internal business perspective in transitional and developing countries. To obtain factual evidence, respondents were asked whether they use or have considered using these techniques. Respondent L argued that the changes introduced in the state regulations have transferred these firms from socio-oriented to profit-oriented entities. Government support has been eliminated and greater autonomy has been given to the management of these firms to control their operational activities, including the product-pricing process, deregulation, privatisation of the economy and market competition. The other organisation-specific factors to consider are those such as ownership, industry type, size and several inter-organisation factors, such as dissatisfaction with existing management policy, change in organisational structure, availability of competent firms, encouraging top management and alterations in production methods (Respondents G and H). Regarding the final question related to strengths and weakness in the structure of the Libyan economy, the answer is primarily based on the results of interview analysis as reported in Table K 4.4.

**Table K 4.4 Respondents' Responses to Question 8**

Code	Statements	Valid N=14 interviews <sup>a</sup>	
		Strengths	Weaknesses
Q 8	In your view, what are the strengths and weaknesses in the structure of the Libyan economy, and what efforts are needed in your organisation to improve financial market activities?		
	• Offering many alternative solutions to the problems that face the Libyan economy such as (the weakness of the LD, creation of new jobs and a reduction in implement rate and transferable ownership enterprises.	✓	
	• Encouraging increased production and improvements in the level of competition within the Libyan economy.	✓	
	• Reduce the risk of financial investment and provide improved production for investors.	✓	
	• Raising individual income levels and improvement in the level of financial disclosure in the Libyan economy.	✓	
	• Contribute to a reduction in the financing costs of ownership and debt.	✓	
	• Motivation of companies' management to improve its efficiency and cause it completion between companies.	✓	
	• Absence of regulation that supports the operation of stock markets		✓
	• An unclear political and economic environment policy in Libya.		✓
	• Libyan banking system is not sufficiently well developed.		✓
	• Low levels of financial disclosure and transparency		✓
	• Corruption is another critical problem and may occur risk to foreign investment and business environment		✓
	• Weakness of public awareness of the role of investment and the role of the stock market in the economy.		✓

Notice a: Details totalled more than N = 14 and 100 *per cent* due to duplicate response.

Source: Analysis of the data obtained from semi-structured interviews.

### K.5 Template Analysis

This part encompasses the template analysis technique of data gathered from this study, as outlined in the qualitative analysis were mentioned in chapter methodology and presented in presentation chapters.

**Objective One:** To assess the success of the economic reform programme in Libya, specifically the deregulation, corporatisation, privatisation and liberalisation that has led to the inception of the Libyan stock exchange.

Questionnaire (Question No)	Research Issues	Semi-structured Interview	Combined Analysis of Questionnaire and Interview results
	Issue Explored	Objective No	General Conclusions
B.1	Deregulation	1	Removal of controls imposed by government and policies that cause negative rates of real interest in order to encourage the efficient operation of market.
B.2			
B.3			
B.4			To understand the basis for competition and rationale for regulating institutions <i>government bodies</i> .
B.5			
B.6			
B.7			To deregulate private sector, financial system, information quality, accountability, availability and transparency in order to reduce corruption.
B.8			
B.9	Corporatisation	1	To establish a structural reform process which provides incentive and efficiency in order to improve economic and public accountability performance.
B.10			
B.11			
B.12			
B.13			To distance the enterprise from direct government control in order to improve competitive neutrality.
B.14			
B.15	Privatisation	1	To correct the failure of markets and restructure industries to efficiently use all resources.
B.16			
B.17			To impact policy package in order to establish a large number of new banks, institutions, corporations and companies.
B.18			
B.19			To develop profit maximisation initiative in order to make a privatised industry more competitive and efficient.
B.20			
B.21			
B.22			To give private sector investments more room in the development process.
B.23			
B.24			To reduce price costs, employment, demand for factors and increase in productivity.
B.25	Liberalisation	1	Reform of government includes: fiscal and tax reform, pension, health and welfare system in order to improve social security system and redevelop social infrastructure.
B.26			
B.27			
B.28			To liberalise trade finance, prices, insurance, foreign direct investment, economic fiscal and monetary policy.
B.29			To reduce transaction costs.

Source: Developed for this research Chapter Seven: Subsection 7.4.1



**Objective Two:** To identify the benefit of a stock market to the Libyan economy. This will involve examining the relationship between macro-economic reform variables and stock market performance variables.

Questionnaire (Question No)	Research Issues	Semi-structured Interview	Combined Analysis of Questionnaire and Interview results
	Issue Explored	Objective No	General Conclusions
C.1	Interest Rate	2	To reform existing framework
C.2			The key area of monetary policy
C.3			To allow lower interest rates and renewed macro policy flexibility
C.4			More power for central banks
C.5			To fully liberalise interest rates
C.6	Exchange rate	2	Real exchange rate can be influenced by nominal devaluations and restrictive demand policies
C.7			To reduce exchange rate instability
C.8			To reduce transaction costs
C.9			To reduce public expenditure and government balance
C.10			
C.11			
C.12	Inflation Rate	2	Is percentage change in the overall level of prices usually per annum
C.13			Is percentage increase in the price of goods and services in an economy usually measured by the consumer price index and the product price index
C.14			
C.15			
C.16			
C.17			To reduce the general price level
C.18	Budget Deficit	2	To reduce budget
C.19			To reduce public debt
C.20			To reduce public works' spending
C.21			To shift emphasis to priority areas
C.22			
C.23			
C.24	Per-capita Income	2	Per capita income, additional economic benefit from extra income
C.25			To address current income regime
C.26			To develop real individual income
C.27			To complete modernisation of the payment system
C.28			
C.29	Real GDP Growth Rate	2	Is one of the ways of measuring the size of economy and market value of all goods and services produced by labour and property located in a country at specific year's prices in period of time
C.30			To increase or decrease economic output
C.31			To link markets' business, scale economies and increase competition
C.32			To improve government services and improve infrastructure rules
C.33			
C.34			
C.35			
C.36			

Source: Developed for this research Chapter Seven: Subsection 7.4.2

**Objective Three:** To assess the performance of market-based economies, with particular reference to the emerging economy of Libya, and to evaluate current and best practice in financial deregulation.

Questionnaire (Question No)	Research Issues	Semi-structured Interview	Combined Analysis of Questionnaire and Interview results
	Issue Explored	Objective No	General Conclusions
D.1	Banking assets Ratio	3	To indicate a depth of bank intermediation and size of bank sector
D.2			To provide levels of financial intermediation in country
D.3			To measure maturity intermediation or asset transformation
D.4			
D.5	Domestic Credit Ratio	3	To indicate high level of banking intermediation by using high share of domestic credit in GDP or high loans to GDP
D.6			To accept deposits to the private sector divided by GDP using the ratio of loans to GDP
D.7			To terminate directed credit allocations
D.8			To improve the environment for banking activity
D.9	Stock Market Capitalisation Ratio	3	To understand the main features of national competition policy in Libya
D.10			To measure stock market activity
D.11			To measure stock market size
D.12			To measure the value of listed domestic shares on domestic exchange divided by GDP To increase liquidity

Source: Developed for this research Chapter Seven: Subsection 7.4.3

**Dependent variables:** As mentioned in Chapter Six: Figure 6.3, each economic reform programme, macro-economic reform and financial maturity variables will be tested as an independent variables with stock market performance variables as dependent variables, where significant relationships between the explanatory variables and the stock market performance variables exist.

Questionnaire (Question No)	Research Issues	Semi-structured Interview	Combined Analysis of Questionnaire and Interview results
	Issue Explored	Dependent Verbalise	General Conclusions
E.1	Market Size	1	To provide a more comprehensive picture of stock market
E.2			Use the total value-traded as a percentage of GDP
E.3			To increase the market capitalisation ratio
E.4			Is not a very good predictor of economic performance
E.5			
E.6	Market Liquidity	1	To provide a high turnover ratio indicator in order to reduce transaction costs
E.7			To reduce price-risk exposure
E.8			To increase turnover ratio
E.9			Total value traded ratio
B.10	Market Activity	1	To increase value-traded ratio which reduce higher transaction costs
B.11			
B.12			
B.13			As measured by total value, traded ratio is a good predictor of economic growth rate
B.14			
E.15			
E.16	Market Concentration	1	To reflect the degree of competition in the market
E.17			Is a criterion that can be used to rank or order various distributions of firms' shares of the total production such as: alternatively; total capacity or total reserves in stock market  A market concentration measure should be decreasing or at least non-increasing with the degree of symmetry between the firms' share. Also, should be decreasing the number of firms in the stock market

Source: Developed for this research Chapter Seven: Subsection 7.4.4

It is important to mention that, the researcher tended not to use computer-assisted qualitative data analysis software (CAQDAS)<sup>70</sup> to analyse the qualitative data. That was due to the following reasons: firstly, the number of interviews was 14, so it was easy to work on them manually; secondly, the researcher needed to be part of analysis process, involved in it, observe data, think of the data, read it again and again. Finally, there are a number of (CAQDAS) software which may vary in relation to the type of facilities that they offer and potentially in their usefulness for different analytic situation, however, only one piece of software was readily accessible or available for the researcher. This type of software requires experience, ability and time to experiment with different software, requiring experiences with a range of software so the most appropriate choice can be made. Seidle (1991) argues, in Saunders et al. (2007), that in a case where CAQDAS software is used by inexperienced researcher, this will move the attention into analytical practices and conceptual problems rather than, into depth analysis, this is referred to the fact that analyst become more concerned with analysis based on quantification than exploration of meaning. Nigel King (personal communication by email. 29 July 2009) suggested to me that<sup>71</sup>:

*“No you don’t need any software. I find a useful method if to write the potential themes on post-it notes and you can then move them around until you have sorted put the final structure of your template.*

*Cheers*

*Nigel”*

As mentioned earlier, in Chapter Six, Subsection 6.10.2, the analysis of interviews’ qualitative data was organised. The first step includes preparing a clear text transcription from the replies of the interviewee. The second phase is the analysis of the text transcriptions by which the key words, phrases and paragraphs relevant to the enquiry are marked and highlighted in different colours. Moreover, paragraphs to be cited from the transcription are underlined and marked in a specific colour. Finally, relevant paragraphs are extracted and organised in tables under different headings. The main objective of this phase is to summarise the transcriptions, to identify the relevant themes, to translate and classify interviewee opinions, views and perceptions into subjects. The third phase consists of creating coding categories in to which subjects are grouped. The central objective of this phase is to group subjects under a particular title or a heading. The final step of the process is to display and present the findings of the analysis using many techniques, such as quotation, citation, diagrams and tables.

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<sup>70</sup> See more details on analysing qualitative data software (CAQDAS) polished article by Tanuka Bhowmick (2006) Building an Exploratory Visual Analysis Tool for Qualitative Researchers [online] available at: <[http://www.geovista.psu.edu/publications/2006/Bhowmick\\_AutoCarto\\_QualRes\\_06.pdf](http://www.geovista.psu.edu/publications/2006/Bhowmick_AutoCarto_QualRes_06.pdf)> [Accessed 3 September 2009].

<sup>71</sup> Nigel King, Professor in Applied Psychology; University of Huddersfield. Nigel has developed a website devoted to the template analysis approach available at: <<http://www.hud.ac.uk/hhs/research/template/index.htm>>.

## Appendix L: Chapter Eight: Statistics Tests; Appropriate Use

### L.1 RESULTS FROM MODELLING ECONOMIC REFORM PROGRAMME

#### L.1.1 The Assumption of Collinearity Diagnostics

Table L 1.1 produce *SPSS* output , of labelled *Collinearity Diagnostics*, which included eigenvalues of the scaled, cross-products matrix, the condition index and the variance proportions for each predictor. The *eigenvalues* values provided some idea as to how accurate this regression model is. If the eigenvalues are fairly similar then the measured model is likely to be unchanged by small changes in the other measured variables (Field, 2005). The *condition index* is another measure of explaining these eigenvalues and represents the square root of the ratio of largest eigenvalue, so the condition index will always be 1 to the eigenvalue of interest.

**Table L.1.1 Collinearity Diagnostics** <sup>(a)</sup>

Model	Dimension	Eigenvalue	Condition Index	Variance Portions				
				(Constant)	ERPD	ERPC	ERPP	ERPL
1	1	4.941	1.000	0.00	0.00	0.00	0.00	0.00
	2	0.029	13.164	0.00	0.01	0.01	0.14	0.89
	3	0.022	15.015	0.02	0.03	0.02	0.80	0.05
	4	0.006	28.562	0.01	0.69	0.39	0.00	0.01
	5	0.003	43.996	0.97	0.27	0.58	0.05	0.05

Notice b:a Dependent Variable: SMP.

Source: Analysis of *SPSS* output from questionnaire survey data.

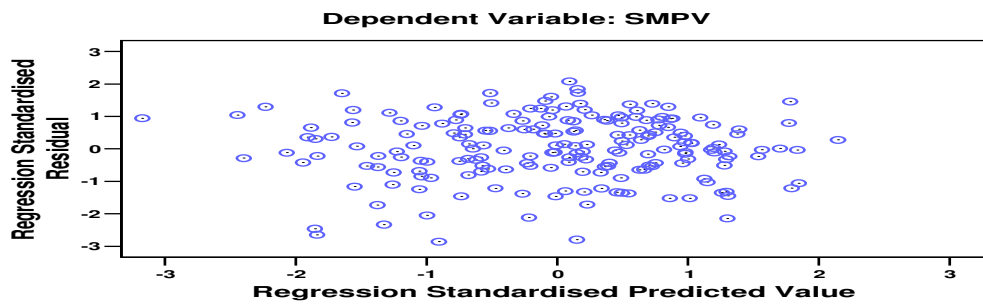
For these data, the final dimension has a condition index of 43.996, which is large compared to the other dimensions. The variance proportions considered between 0 and 1 and for each predictor should be distributed across different dimensions (or eigenvalues). For this model, each predictor has most of its variance loading onto a separate dimension: ERPL had 89 *per cent* of variance on dimension 2, ERPP has 80 *per cent* of variance on dimension 3 and ERPD has 69 *per cent* of variance on dimension 4. The result of this data analysis of collinearity diagnostics found no multicollinearity between predictor variables in this regression analysis. This result is also considered by Spearman's Rho correlation (see Chapter Eight, Table 8.2).

#### L.1.2 Checking Assumptions

As a final stage in the data analysis, the two assumptions of *homoscedasticity* and *linearity* are checked<sup>72</sup>. Figure L 1.1 displays a plot of the regression standardised residual against the regression standardised predicted values. The graph should represent a random array of dots evenly dispersed around zero. If this graph funnels out, then it is likely that there is homoscedasticity in the data analysis, but if there is any sort of curve in this graph, then it is probable data have broken the assumption of linearity.

<sup>72</sup> Homoscedasticity means that variance of errors is the same across all levels of the independent variables X. When the variance of errors differs at separate values of the independent variable X, heteroscedasticity is indicated. When heteroscedasticity is marked, it can lead to serious distortion of findings and seriously weaken the analysis, thus increasing possibility of a Type I error. Heteroscedasticity can take many forms, such as a bow-tie or fan shape. Linearity, as presented by standard multiple regression, can only accurately estimate relationship between dependent and independent variables if the relationships are linear in nature. Due to there being many instances in social sciences in which nonlinear relationships occur, it is essential to examine analyses of such relationship for nonlinearity. If the actual relationship between independent variables X and the dependent variable Y is not linear, as being assumed, results of regression analysis will underestimate the true relationship. This underestimation carries two risks: increased chance of a Type II error for that independent variable X and, in the case of multiple regression, an increased risk of Type I errors (overestimation) for other independent variables X that share variance with that independent variable X (Hair et al., 2005).

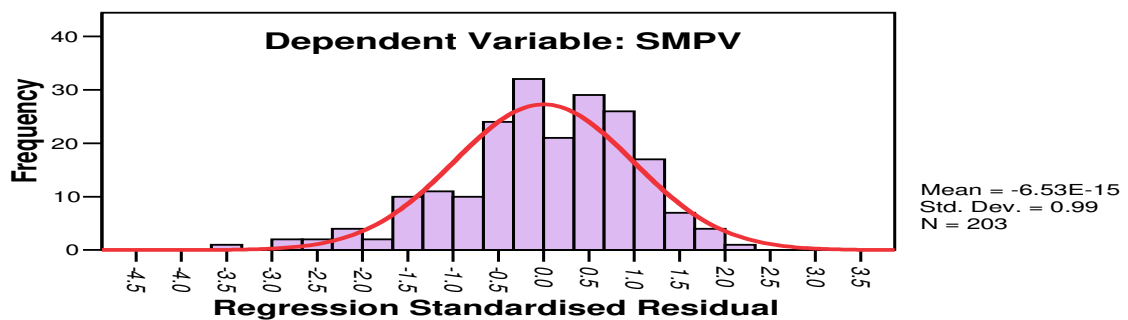
**Figure L 1.1 Scatterplot of Standardised Residuals Against Standardised Predicted Values/Multiple Regression**



Source: Analysis of *SPSS* output from questionnaire survey data.

Figure L 1.1 illustrates the scatter test of how points are randomly and evenly dispersed throughout the plot. This pattern is indicative of a situation in which assumptions of linearity and homoscedasticity have been met and considered. Based on *normality of test residuals*, the histogram and normal probability plot of the study's data outlined in Figure L 1.2 and Figure L 1.3, findings were that the histogram should appear like a normal distribution (a bell-shaped curve)<sup>73</sup>. The output of *SPSS* draws a curve on the histogram to display the shape of this distribution. The normal distribution of histogram in Figure L 1.2 presents distribution as almost normal. This is in contrast to the situation in which a histogram exhibits a non-normal distribution that is extremely skewed (unsymmetrical).

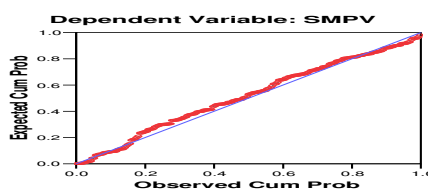
**Figure L 1.2 Normal Distribution of Histogram**



Source: Analysis of *SPSS* output from questionnaire survey data.

The normal probability plot further explains deviations from normality distribution. The straight line in this plot represents a normal distribution and the points represent the observation residuals. Therefore, in a perfectly distributed data set, most points will lie off the line. For the normal probability plot demonstrated in Figure L 1.3, it can be observed that, in general, observed residuals follow the line. Whilst there is some deviation away from that line, these are not far from it and so the overall trend for these residuals is that they follow the line representing a normal distribution.

**Figure L 1.3 Normal P-P Plot of Regression Standardised Residual**



Source: Analysis of *SPSS* output from questionnaire survey data.

<sup>73</sup> Normal distribution: it is assumed that residuals in the model are random, normally, distributed variables with a mean of 0. Therefore, differences between the model and observed data are most frequently zero or very close to zero. Differences much greater than zero happen only infrequently (Field, 2005).

## L.2 RESULTS FROM MODELLING MACRO-ECONOMIC REFORM

### L.2.1 The Assumption of Collinearity Diagnostics

SPSS output produced Table L 2.1, labelled *Collinearity Diagnostics*, which included eigenvalues of the scaled, cross-products matrix, the condition index and the variance proportions for each predictor.

**Table L 2.1 Collinearity Diagnostics <sup>(a)</sup>**

Model	Dimension	Eigenvalue	Condition Index	Variance Portions						
				(Constant)	MERITR	MERER	MERIFR	MERBD	MERPCI	MERGDP
1	1	6.897	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2	0.029	15.475	0.00	0.93	0.01	0.01	0.01	0.04	0.04
	3	0.022	17.759	0.00	0.01	0.13	0.01	0.12	0.04	0.73
	4	0.020	18.685	0.00	0.01	0.03	0.02	0.05	0.80	0.00
	5	0.017	20.118	0.00	0.00	0.07	0.31	0.52	0.00	0.03
	6	0.012	23.850	0.00	0.00	0.57	0.54	0.08	0.05	0.00
	7	0.003	45.807	1.00	0.05	0.19	0.12	0.23	0.07	0.19

Notice c: a Dependent Variable: SMP

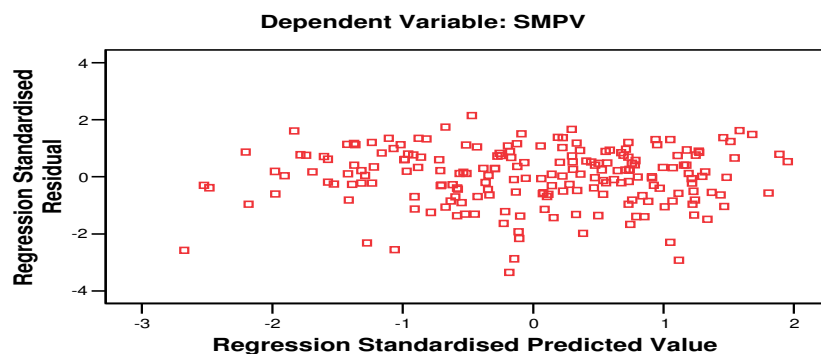
Source: Analysis of SPSS output from questionnaire survey data.

For these data, the final dimension has a condition index of 45.807, which is large compared to the other dimensions. Variance proportions are considered between 0 and 1, and each predictor should be distributed across a range of dimensions or eigenvalues. For this model, each predictor has most of its variance loading onto a different dimension: MERITR has 93 *per cent* of variance on dimension 2, MERPCI has 80 *per cent* of variance on dimension 4 and MERGDP has 73 *per cent* of variance on dimension 3. The result of this data analysis of collinearity diagnostics found no multicollinearity between predictor variables in this regression analysis. This result is also considered by Spearman's Rho correlation (see Chapter Eight, Table 8.11).

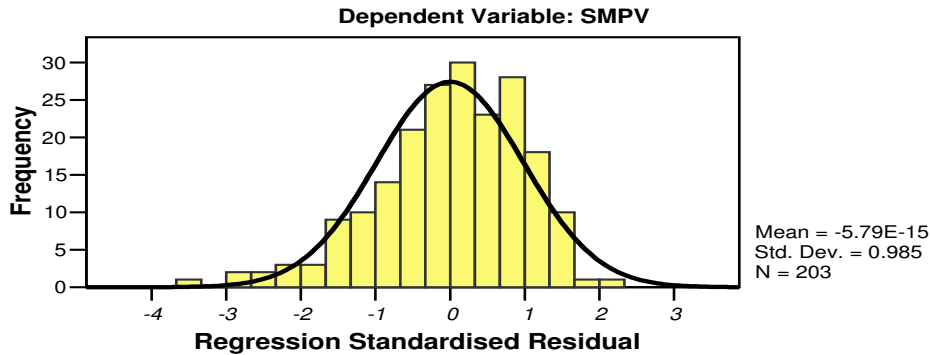
### L.2.2 Checking Assumptions

Figure L 2.1 displays a plot of the regression standardised residual against regression standardised predicted values. The graph should resemble a random array of dots evenly dispersed around zero. If this graph funnels out, then the likelihood is there is homoscedasticity in data analysis. However, if there is any sort of curve in this graph then the likelihood is that data have broken the assumption of linearity.

**Figure L 2.1 Scatterplot of Standardised Residuals against Standardised Predicted Values/Multiple Regression**

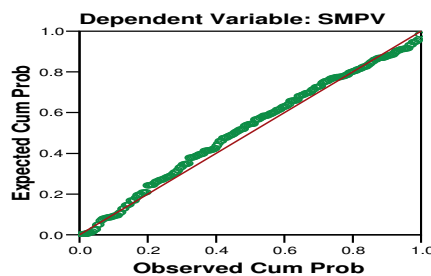


Based on the normality test of residuals, the histogram and normal probability plot of the study's data outlined in Figure L 2.2 and Figure L 2.3, findings were that the histogram should appear as a normal distribution (a bell-shaped curve). Output of SPSS draws a curve on the histogram to display this distribution's shape. The normal distribution of histogram in Figure L 2.2 presents the distribution as being almost normal. This is in contrast to the situation in which a histogram exhibits a non-normal distribution that is extremely skewed (unsymmetrical).

**Figure L 2.2 Normal Distribution of Histogram**

Source: Analysis of SPSS output from questionnaire survey data.

The normal probability plot additionally explains deviations from normal distribution. The straight line in this plot represents a normal distribution and the points represent observation residuals. Therefore, in a perfectly distributed data set, all points will lie off the line. For the normal probability plot, demonstrated in Figure L 2.3, it can be noted that, in general, the observed residuals follow the line. While there is some deviation away from that line, these are not distant from it, and so the overall trend for these residuals is that they follow the line representing a normal distribution pattern.

**Figure L.2.3 Normal P-P Plot of Regression Standardised Residual**

Source: Analysis of SPSS output from questionnaire survey data.

### L.3 RESULTS FROM MODELLING FINANCIAL MATURITY

#### L.3.1 The Assumption of Collinearity Diagnostics

SPSS output produced Table L 3.1, of labelled *Collinearity Diagnostics*, which included eigenvalues of the scaled, cross-products matrix, the condition index and variance proportions for each predictor.

**Table L 3.1 Collinearity Diagnostics<sup>(a)</sup>**

Model	Dimension	Eigenvalue	Condition Index	Variance Portions			
				(Constant)	FMBA	FMDC	FMSMC
1	1	3.903	1.000	0.00	0.00	0.00	0.00
	2	0.051	8.733	0.00	0.07	0.78	0.15
	3	0.035	10.623	0.02	0.32	0.01	0.76
	4	0.012	18.254	0.98	0.60	0.20	0.09

Notice d: a Dependent Variable: SMP

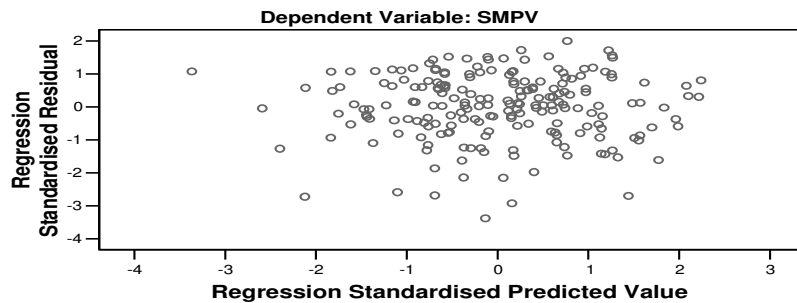
Source: Analysis of SPSS output from questionnaire survey data.

For these data the variance proportions are considered between 0 and 1, and each predictor should be distributed across different dimensions or eigenvalues. For this model, each predictor has most of its variance loading onto a separate dimension: FMDC has 78 *per cent* of variance on dimension 2, FMSMC has 76 *per cent* of variance on dimension 3 and FMBA has 60 *per cent* of variance on dimension 4. The result of this data analysis of collinearity diagnostics found no multicollinearity between predictor variables in this regression analysis. This result was also considered in line with Spearman's Rho correlation (see Chapter Eight, Table 8.22).

### L.3.2 Checking Assumptions

Figure L 3.1 displays a plot of the regression standardised residual against regression standardised predicted values. The graph should resemble a random array of dots evenly dispersed around zero. If this graph funnels out, then it is highly likely there is homoscedasticity in the data analysis. If there is any sort of curve in the graph, then it is probable data have broken the assumption of linearity.

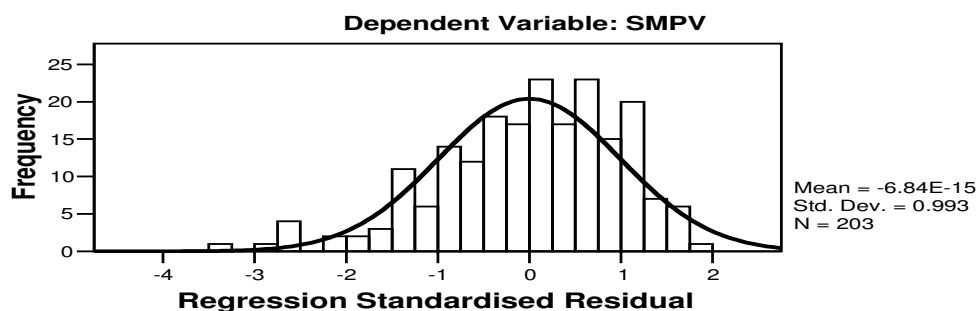
**Figure L 3.1 Scatterplot of Standardised Residuals against Standardised Predicted Values/Multiple Regression**



Source: Analysis of SPSS output from questionnaire survey data.

Based on the normality test of residuals, the histogram and normal probability plot of the study's data, as outlined in Figure L 3.2 and Figure L 3.3, findings were that the histogram should resemble a normal distribution (a bell-shaped curve). The output of SPSS draws a curve on the histogram to display this distribution's shape. The normal distribution of the histogram in Figure L 3.2 presents the distribution as almost normal. This is in contrast with the situation in which a histogram exhibits a non-normal distribution that is extremely skewed (unsymmetrical).

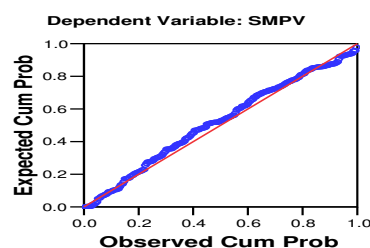
**Figure L 3.2 Normal Distribution of Histogram**



Source: Analysis of SPSS output from questionnaire survey data.

The normal probability plot additionally explains deviations from normality distribution. The straight line in this plot represents a normal distribution and the points represent observation residuals. Therefore, in a perfectly distributed data set, all points will lie off the line. For the normal probability plot demonstrated in Figure L 3.3, it can be observed that, in general, the observed residuals follow the line. Whilst there is some deviation away from that line, these are not far from it and so the overall trend is that they follow the line representing a normal distribution.

**Figure L 3.3 Normal P-P Plot of Regression Standardised Residual**



Source: Analysis of SPSS output from questionnaire survey data.



#### L.4 Regression model Background

Linear regression analysis originated from statistics and has been widely used in econometrics statistics testing.

##### L.4.1 Simple Linear Regression Model (SLRM)

Simple regression seeks to produce an outcome variable from a single predictor variable. The following general equation the idea that can predict any data using:

##### Setting up the Model

$$\text{outcome}_i = (\text{model}_i) + \text{error}_i \quad (\text{L.1})$$

The equation being predicted for a particular person is the dependent variable or the regression which will denote it by Y. The predictor variable by whatever model fits the linear model or model based on a straight line denoted by X, is also called the independent variable or the explanatory variable plus some kind of error.

The probabilistic regression model or the equation for a strength line is given by the formula as:

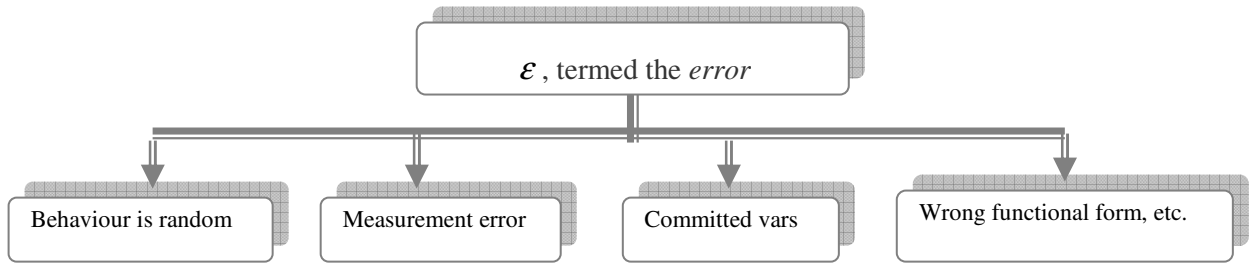
$$Y = \alpha + \beta X$$

Y is endogenous, X is exogenous, etc. This implies X determines Y exactly, a deterministic relationship. However if you make Y stochastic then the simple linear model is:

$$Y = \alpha + \beta X + \varepsilon \quad (\text{L.2})$$

where  $\varepsilon$  is an rv with some distribution as displayed in Figure L 4.1.

Figure L 4.1 Potential  $\varepsilon$ , termed the error



Source: Developed for this research from research model.

Actually,  $\varepsilon$  is a *sequence* of r.v. which is denoted by the *error* term, one value of X. When X is fixed in the sample or non-stochastic then all the stochastic part of Y is determined by this error process,  $\varepsilon$ . In the previous discussion, it's possible to test how the linear relationship between two variables could be measured using simple linear correlation coefficient. Regression analysis, on the other hand, attempts to determine the functional relationship between two or more variables. However, the most basic regression model is the simpler regression model which is a bivariate linear regression. In this case one variable is being predicted by another. Thus, the relationship using correlation analysis could be tested. The probabilistic regression model can be expressed as:

$$Y_i = \alpha + \beta X_i + \varepsilon_i \quad i = 1, \dots, n \quad (\text{L.3})$$

for cross-section data, or

$$Y_t = \alpha + \beta X_t + \varepsilon_t \quad i = 1, \dots, t \quad (\text{L.4})$$

for time series data

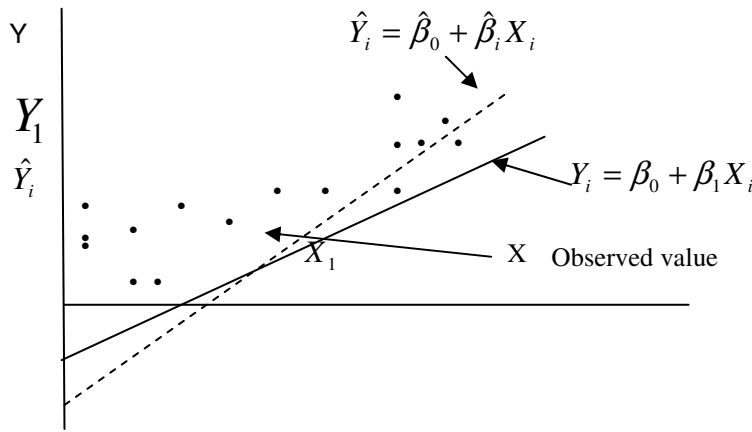
The general linear model (GLM) used in this research which is defined<sup>74</sup>:

$$Y_i = \beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \dots + \beta_k X_{ik} + \epsilon_i \quad (\text{L.5})$$

$\xrightarrow{\text{Y-Intercept}}$   $\xrightarrow{\text{Slopes or Coefficients}}$   $\xrightarrow{\text{Random Error}}$   
 $\xrightarrow{\text{Dependent Variable}}$   $\xrightarrow{\text{Independent (Explanatory) Variables}}$

Where  $Y_i$  is the outcome variable being predicted is the dependent variable or the *regressand*. The predictor variable, denoted by  $X_i$ , is  $i$ th participants' score on the predictor variable and called either the independent variable or the explanatory variable,  $\beta_1$  is the coefficient of the first predictor  $X_1$ ,  $\beta_2$  is the coefficient of the second predictor  $X_2$ , and  $\beta_0$  is the intercept of that line.  $\beta_k$  is the coefficient of the  $n$ th predictor  $X_k$ . The portion  $\alpha + \beta X_i$  represents the deterministic type of the probabilistic model (see Figure L.4.2).

**Figure L 4.2 Simple Linear Regression Model**



Source: Introduction to the linear Regression Model (2008).

There is a residual term  $\epsilon_i$  which represents the model's random component and the observed value of Y for the  $i$ th participant, which plays a significant role in regression analysis. The Ordinary Least Squares (OLS) estimate of  $\beta_i = \bar{Y}_i$ , so the residual  $\epsilon_i, \dots, \epsilon_n$  are defined by:

$$\Rightarrow \epsilon_i = Y_i - \hat{Y}_i \quad \text{or,}$$

$$\Rightarrow \epsilon_i = Y_i - \bar{Y}_i$$

Thus,  $\alpha$  and  $\beta$  are unobtainable and should be estimated by using the sample statistics  $a$  and  $b$ . Thus, in equation L.3 these could be re-expressed as:

$$Y_i = a + bX_i + \epsilon_i \quad (\text{L.6})$$

<sup>74</sup> Estimate Regression Equation can be written as:

$$Y_i = b_0 + b_1 X_{i1} + b_2 X_{i2} + \dots + b_k X_{ik} + \epsilon_i$$

There is no disparity between this equation and L.5. They merely use different letters to represent the coefficients. The sole difference is that this equation  $b_s$  instead of  $\beta_s$  and both versions are the same.

## Appendix M: Chapter Nine: Finance and Economic Growth

In this appendix we present the empirical research that discusses a link between the financial system and stock market development, and economic growth. Table M.1 presents a summary of the main previous empirical evidence on finance and economic growth.

**Table M.1 Summary of Empirical Findings on Finance and Economic Growth <sup>a</sup>**

Author(s) (Year)	Sample size and period	Independent Variables	Dependent Variables	Findings
King and Levine (1993b)	80 countries 1960-1989	Bank development = total liquid liabilities/GDP or M3/GDP, ratio of claims on non-financial private sector to domestic credit, log of enrolment, government. Expenditures to GDP, inflation rate, (exports + imports)/GDP	GYP = real per capita GDP growth, GK = growth rate of per capita stock, INV=ratio of average annual investment to GDP, bank credit/(deposit money + bank credit)	Positive relationship between growth and banking; FIs enhance efficiency of allocation, therefore affecting LR economic growth.
Levine (1998)	47 countries 1976-1993	Legal origin enforcement output (RGDP/capita), creditor rights, bank development	Bank development = (domestic credit/GDP); RGDP/capita growth	Legal systems influence banking development; legal system (as a component of the banking system) is positively associated with economic growth, capital accumulation, and productivity growth.
La Porta et al. (1997)	49 countries 1976-1993	GDP growth, log of GDP, rule of law, French origin, Scandinavian origin, German origin, anti-director rights, one share	External capital (market capitalisation/GNP), domestic firms/ population; IPOs/population, Debt/GDP	Civil law countries (French particularly) have the least developed capital markets.
Levine and Zervos (1998)	47 countries 1976-1993	Turnover = value of the trades of domestic shares as a share of market capitalisation, value traded = value of the trades of domestic shares as a share of GDP, capitalisation = value of domestic shares as a share of GDP, and volatility = measure of stock return volatility	Output growth = real per-capita GDP growth, capital stock growth = real per-capita capital stock growth, productivity growth = output growth-capital stock growth, average savings = savings as a <i>per cent</i> of GDP	Initial levels of turnover and bank credit are positive and significant in explaining subsequent growth (all measures).
Garcia and Liu (1999)	15 countries 1980-1995	Domestic credit/GDP, M3/GDP, stock market liquidity = total value traded/GDP, turnover = total value traded/market capitalisation.	Market capitalisation	Financial intermediary development and stock market development are complements.
Rousseau and Wachtel (2000)	47 countries 1980-1995	Per-capita market capitalisation, per-capita value traded, market capitalisation/GDP, value traded/GDP, real per-capita M3	Real per-capita GDP growth	Causality runs from stock market indicators to economic activity.
Levine et al. (2000)	71 countries 1960-1995	Legal origin: English, French, German, liquid liabilities, commercial central bank, private credit	Real per-capita GDP growth, liquid liabilities, commercial central bank, private credit	Financial intermediary development exerts a positive, significant impact on economic (GDP) growth.
Levine (2001)	48 countries 1980-1995	Regulatory dummy, legal system, market capitalisation/GDP, total value traded ratio (dollar trading value/GDP), overhead costs, activity: (total value traded intermediary private credits)/GDP, size: (market capitalisation intermediary private credits)/GDP, efficiency: (total value traded/bank overhead cost ratio)	Real per-capita GDP growth	Financial services view is significant as opposed to models for only banking or only market based views. Activity, efficiency, and aggregate principal components have a positive and significant influence on real per-capita GDP growth.
Beck and Levine (2003)	40 countries 1976-1998	Turnover ratio, bank credit = claims on sector/GDP, schooling, govt. consumption, trade openness, inflation black market premium	Real per-capita GDP growth	Use system panel estimator (with 5-year averages and cross-country OLS) and GMM estimators: find turnover and bank credit are positive and significant. GMM difference estimator: neither bank credit nor turnover are significant. GMM level estimator: only turnover is positive and significant. The use of annual data only finds that ONLY turnover is significant and positive; bank credit is insignificant.
Zhu et al. (2004)	47 countries 1976-1993	Stock market liquidity (turnover), banking sector	Annual growth GDP/capita	Stock market liquidity is not statistically significant in explaining GDP growth in the presence of (Asian market) outliers.

Notice a: Further information relating to these empirical findings can be found under the author's name in the research reference.